

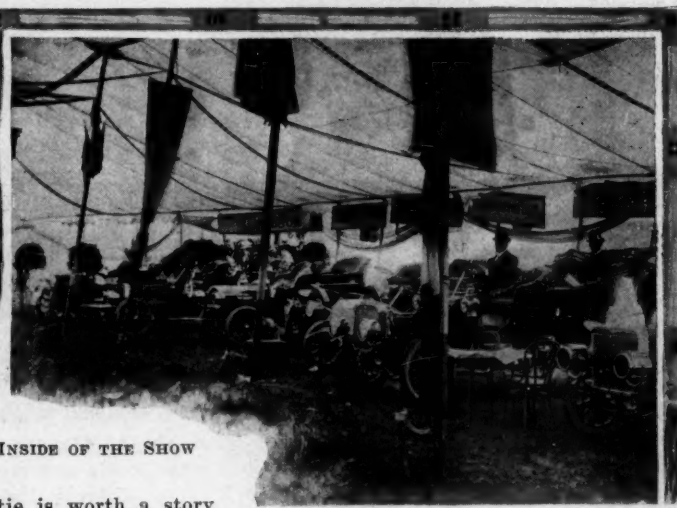
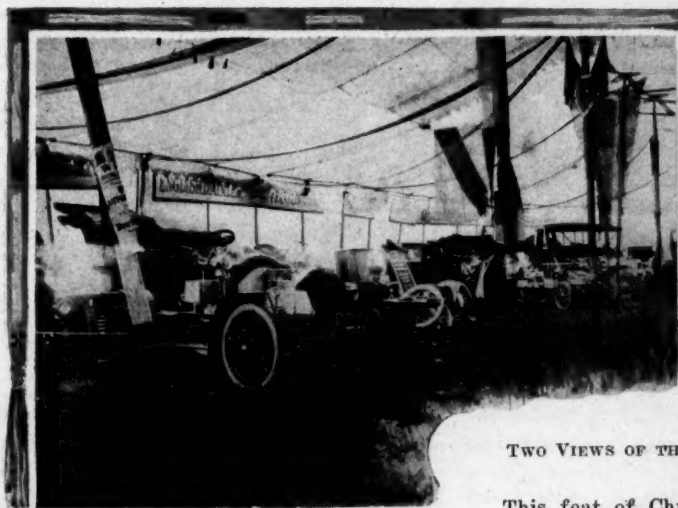
# MOTOR AGE

VOL. IX No. 22

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## OPEN-AIR SHOW TERMED A SUCCESS



TWO VIEWS OF THE INSIDE OF THE SHOW

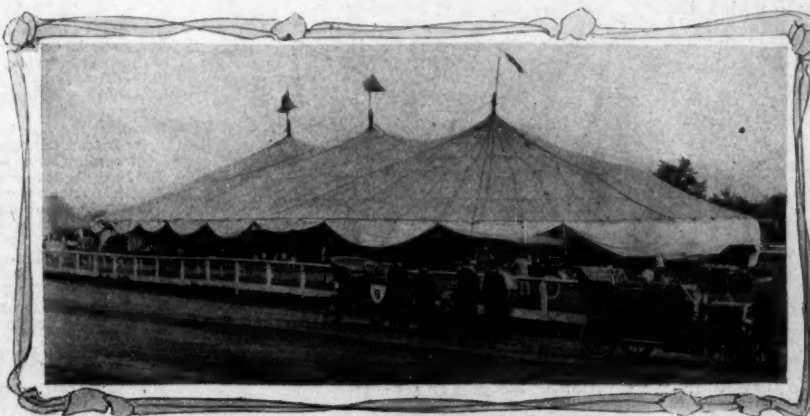
**N**EW YORK, May 28—Perhaps it is speed and speed only, after all, that will draw and interest the big general public in any outdoor exhibition of automobiles. Walter Christie, by his successful try at the mile track record—even to tie Barney Oldfield's famous 53-second mile, is certainly worthy to be dubbed success—brought to a somewhat brilliant ending on Saturday what had been for 2 days a rather tame open-air show up at the Empire City track, so far as attendance and hurrah went. The announcement of his intended go at the mile record had brought the biggest crowd of the carnival and when he whirled around the circuit, kicking up clouds of dust at the turns and skidding in hair-raising fashion, the grandstanders, who had dozed for 2 days through sand-plowing matches, slow-going power stunts, and long-drawn-out fuel efficiency tests, got up on their hind legs and howled with glee, just as they had always done before in the good old days when the famous Empire City track contests made automobile racing history.

This feat of Christie is worth a story by itself and the details of the encouraging attempt at show-giving in the open air can be postponed for a paragraph or two until it is told.

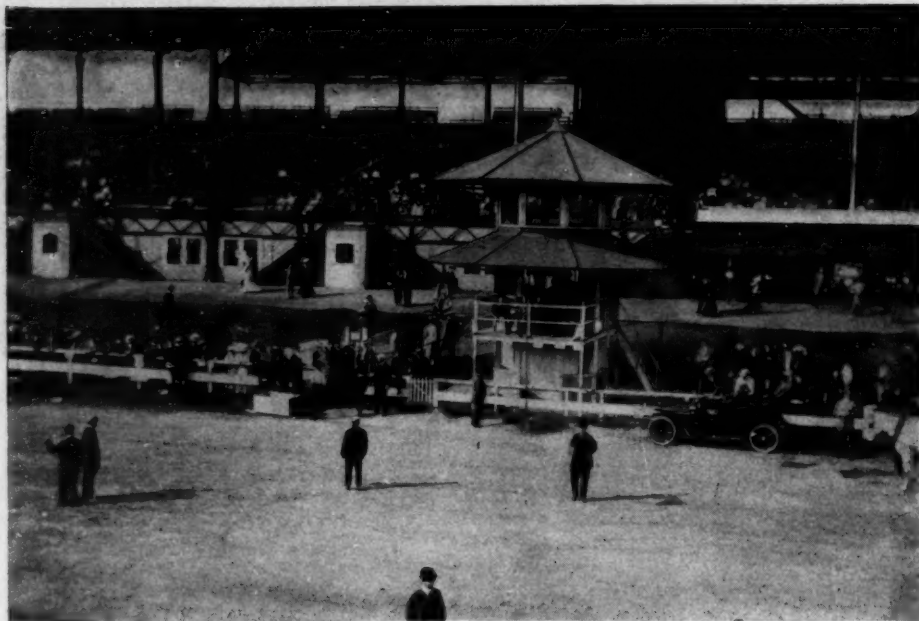
Al Reeves is a showman clear through and Al managed this show for the New York Automobile Trade Association. None is quicker than he to see when things are going too slow for dividend paying and none more resourceful in interjecting new features for box office salvation. Al ran across Christie, who had strolled in to look over things. The idea struck Reeves and the suggestion was made that the great direct-drive racer, which had scored 35 seconds in a straightaway mile on the none too fast Atlantic City

beach, should have a go for the mile record. Now, Walter Christie is loyal to his speed creations and has never yet dodged a chance to try one of them out. This time he had come to the conclusion that his car was about right and so, for a wonder, it was not in progress of remodeling. In fact, he told the writer he was through tinkering with it and was pretty sure that he had gotten it into shape to turn a 2-mile-a-minute trick with it at Ormond next winter. So Reeve's suggestion was promptly accepted and toward the end of the afternoon the swarm of demonstrating scorchers was chased from the course, which, by the way, had been pretty well torn up by the touring cars during the 3 days and had no special preparation for the record trial.

Christie tossed aside his every-day coat, donned a leather jacket, and undertook his tack without grandstand play. He had negotiated that famous mile circuit many times in its track racing days gone by and knew the tricks of the turns well. He swung the circle for a mile before he gave the nod to the timers that this time he meant busi-



EXHIBITORS' TENT AT THE EMPIRE TRACK SHOW



THE GRAND STAND AS IT APPEARED FROM THE TRACK

ness. This preliminary mile was done in 53% seconds, but somehow the second circuit, the mile itself, dropped to 54% seconds. The first half was done in 27% seconds and the last in 26% seconds. A second attempt quickly followed. This time the first half was covered in 26% seconds, and the next in 26% seconds, a mile in 53 seconds. Barney Oldfield had escaped a beating of his world's circular track mile record, made at Los Angeles, December 21, 1904. Christie had tied this and had lowered Barney's Empire City track mile, scored last autumn, from 53% to 53 seconds.

It will be remembered that at Morris park, whose mile has but a single turn, Christie negotiated a mile in 52% seconds on July 3, 1905, tying the mile made by Chevrolet with the Fiat on June 10 previous. Webb Jay, however, holds the Morris park mile record with 48% seconds, made in the White steamer the day following the Christie feat. On Saturday Christie drove, as has been said before, the same four-cylinder, 110-horsepower, direct-drive racer with which he made his 35 seconds' mile at Atlantic City last April.

Dismissing thus briefly the not unwelcome high speed interpolation of Christie and returning to the show itself, which, by the way, was favored with perfect spring weather throughout, the first question naturally to be answered is as to the success of the New York Automobile Trade Association's experiment from the box office and the business standpoint. It can best be answered by the statement that a majority of the dealers exhibiting have already expressed themselves in favor of another show being held in the autumn. It is a pretty safe estimate that the attendance during the 3 days probably reached 5,000. This is not, however, based on any official figures or inside information as to box office receipts, but is

the mere guess of an observer. The management declares that a substantial profit was shown and that the members of the association exhibiting will receive a rebate that will cut down considerably what the show has cost them. The exhibitors are inclined for the most part to the opinion that the show was a good investment. They got a whole lot of publicity and some valuable experience as to the worth of the experiment at comparatively inconsiderable expense.

The distance from the city and lack of easy access by other means than an automobile was in itself against the show's drawing the general public. One critic truly said that an intending buyer could much more easily visit the shops along automobile row. Then again at this season of the year no new models were on view that buyers and the public had not already seen in the shows and shops.

It would be rather unfair, though, to criticise the tests conceived and carried out as adjuncts to the exploitation of the cars as of little value in attracting the public. There was nothing spectacular about them and it was not intended that there should be. An exploitation of cars by exhibition, by test of various factors of utility, and by fast demonstrating rides on the track was all that was contemplated by the promoters. The idea was all right. The wrong season, though, was chosen. Though there was not any general selling, there were some sales made, which more than paid two or three concerns for their trouble and expense.

Tradesmen learned a lot which will be of value in the future, got quite a lot of publicity and did not spend too much. What they learned they propose to put to use in an autumn outdoor show. Then, they say, there will be new models to show, particularly of the four-cycle cars, which the buying public will have a chance and be glad to see. From such a show, they say, the fall trade, which was really considerable last year, will be vastly stimulated. They propose to add more speed events, races and contests of interest to the general public.

The exhibitors of accessories, who were placed under the grand stand, complained bitterly of their isolation. It is proposed to remedy this next time by putting them in a tent in the inner field as were those displaying automobiles. There were twenty-four of these accessory exhibitors. One of them, the Hartford Suspension Co., showed a Gobron-Brillie car at its booth. Thirty-three branches and agencies exhibited thirty-five makes of cars. They and their exhibits are set forth elsewhere.

A big tent covering 22,000 square feet housed the exhibit of motor cars. The flaps were raised so that there was plenty of ventilation. Yacht and signal flags en-

## EXHIBITORS AT THE OPEN-AIR SHOW

### AUTOMOBILES

Matheson Motor Car Co.—Matheson.  
Covell & Crosby Motor Co.—American.  
Theo. E. Schulz—Marmon.  
Wayne Automobile Co.—Wayne.  
H. J. Koehler Co.—Buick.  
George J. Scott Motor Co.—Glide.  
Cadillac Company, of New York—Cadillac.  
White Sewing Machine Co.—White.  
Darracq Motor Car Co.—Darracq.  
Cryder & Co.—Mors.  
DeDietrich Import Co.—DeDietrich.  
Peter Fogarty—Northern.  
Welch Motor Car Co.—Welch.  
C. A. Duerr & Co.—Royal Tourist.  
Auto Import Co.—Rochet-Schneider.  
Homan-Schulz Co.  
Frayer-Miller Motor Car Co.—Frayer-Miller.  
Advance Motor Co.—Pungs-Finch.  
A. G. Spalding & Bros.—Stevens-Duryea.  
Reo Motor Car Co.—Reo.  
P. A. Fogarty—Acme.  
Oldsmobile Co. of New York—Oldsmobile.  
Aerocar Co.—Aerocar.  
E. T. Kimball Co.—Corbin.  
Smith & Mabley—Simplex, Panhard, Mercedes.  
Maxwell-Briscoe Motor Co.—Maxwell.  
Ardley Motor Car Co.—Ardley.  
Majestic Automobile Co.—Queen.  
Atlantic Motor Car Co.—Autocar.

S. B. Bowman Automobile Co.—Clement-Bayard.  
Decauville Automobile Co.—Franklin.  
Winton Motor Carriage Co.—Winton.  
New Amsterdam Motor Co.—Crawford.  
New York Motor Car Co.—St. Louis.

### ACCESSORIES

Eastern Carbon Works.  
Raines & Co.  
Acme Autometer Co.  
The Automobile.  
Allen Bag & Specialty Co.  
Vacuum Oil Co.  
Havemeyer Oil Co.  
Diesemann Shock Absorber Co.  
Newcomb Carbureter Co.  
Mutual Accessories Co.  
Gaither-Owen Carbureter Co.  
Hartford Suspension Co.  
Duplex Ignition Co.  
E. T. Kimball Co.  
Connecticut Telephone & Electric Co.  
Pennsylvania Rubber Co.  
Hutchinson Electric Horn Co.  
Vorhees Rubber Company.  
Hewitt Motor Car Co.  
Michelin.  
Auto Cover and Top Co.  
R. & P. Traction Tread Tires.  
Manhattan Lamp Works.



## TABLE OF RESULTS OF TESTS AT NEW YORK'S OPEN-AIR SHOW

## FLEXIBILITY TEST

Open to gasoline cars seating four or more passengers. This test consisted of a mile high speed time trial and  $\frac{1}{4}$ -mile slow speed time trial, both made on the same gear, with a flying start. An official observer was carried. Won by Percy Owen's 24-horsepower Aerocar, time for mile, 2:07 2-5. Time for quarter-mile, 3:27 4-5; total, 700 points. Burgoyne Hamilton's 50-horsepower Welch, time for mile, 1:21 2-5; time for quarter-mile, 2:34; total, 534 points, second. Peter Fogarty's 20-horsepower Northern, mile, 2:19 3-5; quarter-mile, 2:42 2-5; total, 610 points, third. Sidney Bowman's 24-horsepower Clement-Bayard, mile, 1:40; quarter-mile, 2:32; total, 508 points, fourth. Theodore E. Schultz's 30-horsepower Marmon, mile, 1:37 4-5; quarter-mile, 2:17 1-5; total, 451 points, fifth. Frank Lawwell's 24-horsepower Frayer-Miller, quarter-mile, 2:19 2-5. F. P. Fuller's Ardsley, mile, 1:31 3-5. Ernest Keeler's 28-horsepower Oldsmobile, mile, 1:33 2-5. Motor stalled in quarter-mile test. Atlantic Motor Car Co.'s 24-horsepower Autocar, mile, 1:46 2-5; quarter-mile, 7:39. Disqualified for slipping clutch.

## BRAKE TEST

For touring cars claiming 40 miles an hour or better cars were given a  $\frac{1}{4}$ -mile start and traveled a marked  $\frac{1}{4}$ -mile in less than 11 seconds, when brakes were applied on signal. The minimum distance counted. Cars were given two trials and an observer was carried on each car. Won by Ernest Keeler's 28-horsepower Oldsmobile, stopped in 167 feet; Theodore E. Schultz's 30-horsepower Marmon, second, stopped in 175 feet; Atlantic Motor Car Co.'s 24-horsepower Autocar, third, stopped in 177 feet.

## REVERSE GEAR 75-YARD DASH

Open to all cars with planetary gear transmission carrying five passengers, to cover 75 yards from standing start, in minimum time, with gear in reverse. Won by

Burgoyne Hamilton's 50-horsepower Welch, time, :12 4-5; Peter Fogarty's 20-horsepower Northern, second, time, :21 4-5.

## OBSTACLE RACE

Open to cars under 100-inch wheel base. Obstacles were placed on the track. Operator covered the prescribed course, touching the least number of obstructions. Prize given to the car making best performance within a specified time. Distance, 200 yards. Won by Louis R. Smith's 10-horsepower Maxwell, time, 0:16; A. L. Kull's 50-horsepower Wayne, second, time, 0:16 1-5; Atlantic Motor Car Co.'s 24-horsepower Autocar, third, time, :16 3-5.

## VIBRATION TEST

Open to all gasoline touring cars. Each car was required to carry a standard pail, supplied by the committee, filled with water on any part of the car floor selected by contestant. The prize was given to the car covering 200 yards, standing start, with least amount of water spilled. Car had to travel on high gear before crossing finishing line. Won by Ernest Keeler's 28-horsepower Oldsmobile; loss,  $\frac{1}{8}$  inch; Hartford Suspension Co.'s 35-horsepower Gobron-Brillie, second; loss, 6-8 inch; A. L. Kull's 50-horsepower Wayne, third; loss,  $\frac{1}{4}$  inch; George J. Scott Motor Co.'s 36-horsepower Glide, Theodore Schultz's 30-horsepower Marmon, and Burgoyne Hamilton's 50-horsepower Welch also competed, losing from  $\frac{1}{8}$  inch to 1 inch.

## BRAKE TEST

For touring cars claiming 30 miles an hour, but over 24 miles an hour. Cars were given a  $\frac{1}{4}$ -mile start and traveled a marked  $\frac{1}{4}$ -mile within 19 seconds, when brakes were applied on signal. The minimum distance counted. Cars were given two trials and an observer was carried on each car. Won by Cadillac company's 10-horsepower Cadillac, 66 feet; Peter Fogarty's 12-horsepower Northern, second, 84 feet.

## POWER TEST

In this contest the prize was awarded for the greatest distance traveled through a prepared stretch of sand 75 feet long, start being made 5 feet from the entrance. Won by Ardsley Motor Car Co.'s 35-horsepower Ardsley, time :09; Burgoyne Hamilton's 50-horsepower Welch, second, time, :09 2-5; Cadillac Co.'s 30-horsepower Cadillac, third, time, :12 1-5; Theodore E. Schultz's 30-horsepower Marmon, fourth, time, :13 4-5; Peter Fogarty's 20-horsepower Northern, fifth, time, :14; George J. Scott Motor Co.'s Glide, time, :14 2-5; Atlantic Motor Car Co.'s 24-horsepower Autocar, time, :28; White Sewing Machine Co.'s 18-horsepower White, time, :42 4-5.

## EFFICIENCY TEST

In this test the prize was given for the greatest distance traveled per horsepower hour. A standard gasoline reservoir was furnished by the committee for attachment to carburetor. One pint of gasoline was furnished. Ten cubic inches of displacement was reckoned as 1 horsepower. Won by L. Burne, driving 10-horsepower Cadillac, 4:37 miles; total points, 2,601; technical horsepower rating, 9:8. Percy Owen's 24-horsepower Aerocar, 3 miles 95 feet; total points, 793, second; technical horsepower rating, 20:9. Frank Lawwell, driving 24-horsepower Frayer-Miller, 3 miles 385 feet; total points, 614, third; technical horsepower rating, 26:4. Peter Fogarty's 20-horsepower Northern, 2 miles 360 feet; total points, 438, fourth; technical horsepower rating, 24:9.

## TRACTION TEST

Prize was given for the car making the best performance per horsepower hour per ton mile. Cars were run 200 yards pulling a sled carrying 500 pounds of sand. Won by Atlantic Motor Car Co.'s 24-horsepower Autocar, time, :25 2-5; Frank Lawwell's 24-horsepower Frayer-Miller, second, time, :28 4-5; Joseph Bell, Jr.'s 18-horsepower White, third, time, :44 4-5.

circled the tent and within there were tasteful decorations of bunting, banners and shields.

The mornings were given over to speed demonstrations on the track. In fact the course was alive at all times with cars showing their paces for the satisfaction of their exploiters and those who sought rides for information or just the fun of the thing.

The various tests, which were made a feature of the carnival, were the boiled down consensus of the suggestions of the members. They were whipped into shape very creditably by the technical committee, which was composed of E. T. Bird-sall, A. L. McMurtry and W. P. Kennedy.

Some of the ideas were clever. Flexibility was tested by a mile on top speed, followed by a  $\frac{1}{4}$ -mile at slow speed on high gear.

It was attempted to compare the relative strength of brakes by running the cars at full speed and then putting on the brakes at a signal and measuring the distance. Clever operation and the skidding trick, however, had much to do with results.

The power test was rather interesting. A sand pit was prepared, 175 feet long. Each car was started from a standstill 5 feet from the beginning of the pit. It was fun to see the cars plow. Two or three of the first ones stalled. Though the sand was raked over each time these pioneers seemed to have packed a path underneath the surface, for most of the

cars following them got through without stalling. A bit longer pit might have made the task harder and possibly given all an equal chance.

Efficiency was demonstrated by furnishing each car with a measured pint of gasoline and letting it run until it stalled. Measurements were made and the distance per "horsepower" was calculated. Asked to explain what this meant, Committee man Kennedy replied: "People who are interested will understand,"

and very carefully refrained from saying, "We don't care for the others."

Vibration was tested by putting pails of standard size filled with water on the flues of the cars, running them 200 yards from a standing start and measuring the amount of water spilled.

To test traction cars were made to drag a loaded sled 200 yards. Herein came some more "horsepower hour per ton mile," calculated by the technical committee of the trade association.



CLUB HOUSE AND CROWD WATCHING THE TESTS



# MOTOR AGE

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## OPEN-AIR SHOWS

**I**T HAS long been the dream of Charles E. Duryea to see an open-air show, and Duryea's dream in this matter—as in many other matters concerning automobiles, by the way—has come true. The first open-air show was not perhaps all its promoters expected in the way of attendance or patronage on the part of exhibitors, but it will serve well to demonstrate that open-air shows are consistent and timely. The affair at Empire track was held at a time of the year when the buying season had practically ended and when prospective automobilists had given up any intention of becoming purchasers of motor cars before another season had rolled around. Those cars that were exhibited were the same, as to model, at least, as those seen during the winter months at the indoor shows, and consequently were not to be classed as innovations. An open-air show held in the fall would naturally contain the forthcoming season's models and would attract purchasers of cars. The open-air show, bringing out new models and early purchasers, will soon take the place of the mid-winter affairs and will be the means of permitting makers to so arrange shop practices as to keep their plants going practically the entire season. This is what the fall show will do, and a fall show naturally means an open-air show, with its attending demonstrations.

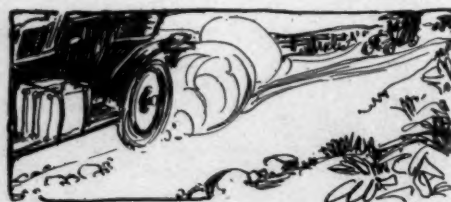
## GEARLESS CARS

**E**FFORTS are being made almost daily by manufacturers to convince not only the public, but themselves that it is possible to do away with much of the complication that exists in the automobile through the use of the speed change gear. The work of the Napier people in England with a six-cylinder motor car has been such as to show that a year or so hence motor cars will be equipped with only one forward and one reverse speed. Until lately it was not thought probable the four-cylinder motor had sufficient flexibility to do away with speed change gears and yet perform all the functions that it

might be called upon to perform in a drive of close to a hundred miles upon ordinary roads. The performance of the Oldsmobile in running from New York to Poughkeepsie with the speed change lever locked in the high gear notch and sealed there, demonstrates what may result with close attention in motor and carburetor design and adjustment. That other makers will now attempt to show what can be done in this line is assured, and it is safe to predict that startling results will be forthcoming. Much of the difficulty of motor car construction will have been done away with immediately it is determined that speed change gears can be eliminated, to say nothing of the saving that will be made in the cost of production.

## NO COMPROMISE

**T**HERE is no room for any sort of a compromise in the weight rule in the regulations governing the Glidden tour; if it is reasonable and just to place any limit on the weight of cars to entitle them to contest for the trophy, the 2,000-pound limit is as reasonable as the proposed compromise figure of 1,700 pounds. Motor Age has all along contended that this tour was designed primarily for all classes of cars for the purpose of promoting and fostering touring in automobiles. Mr. Glidden, the donor of the trophy, is a world-girdling tourist and is wealthy enough to enjoy the comforts of a large car. But he did not, it is believed, either desire or expect that small cars would be shut out and only large cars permitted to compete in the contest for the cup he donated. If this had been his idea it is likely the first Glidden tour would have been run without runabouts and very light touring cars. But these light cars were permitted to enter the contest and so far as known there was no protest entered

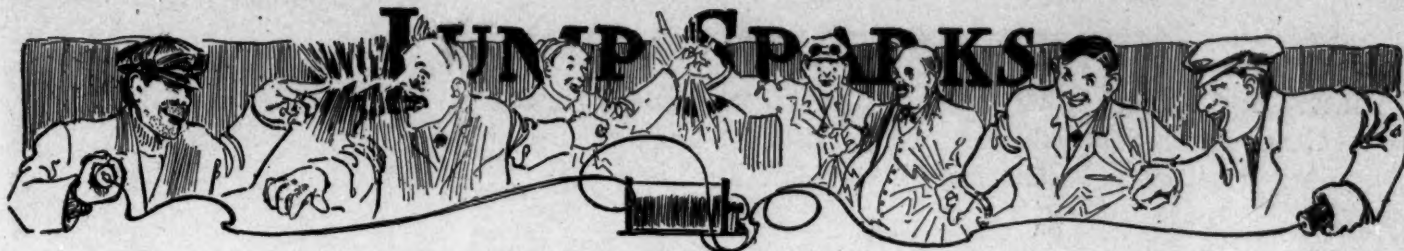


against them. It is not a matter of number of cylinders, it is not a matter of power of motors, it is only a matter of weight, but upon what basis of figuring no one can tell. The Glidden tour was designed as a tour for automobilists and not a tour for any particular class or weight of cars. The committee might as well say that only 200-pound men could compete for the trophy as to say that only cars above a given weight may take part. Why should a 1,700-pound car be permitted and not a 1,500-pounder, or a 1,200-pounder, or a 1,000-pounder, or an 800-pounder? The rules first proposed as to weight were inconsistent and their publication caused a howl of disapproval. The change to the 1,700-pound minimum limit only eliminates a few objections, for there are lighter weight cars to be taken into consideration. The principle was wrong at the start and it is wrong now—nothing short of an absolute free-for-all affair, so far as weight and power goes, should be thought of, and the American Automobile Association can ill afford to put itself on record as favoring one class, now that the tour has been run as an open affair.

## DOING SOMETHING

**T**HE state of New York now has over 25,000 licensed automobiles. Millions of dollars are invested in automobiles each month in the city of New York. This is a direct result of hustle on the part of everybody connected with the automobile trade; New Yorkers are doing, doing all the time. They take advantage of each opportunity that happens along and they obtain results in proportion therewith. The automobile trade in other American cities has been satisfactory, it is true, but it might be of a greater magnitude if the tactics of the New York agents and dealers were followed more closely. Endurance and economy tests and all sorts of contests which tend to show the possibilities of the motor car and which keep people aware of its presence are practiced, with the result that the automobile is constantly before the people, who naturally sooner or later become interested in all that is going on and fall victims to the habit. There is no such activity in other cities in this country. There might be and there ought to be. It would mean increased sales and consequently more users of automobiles, and a better feeling on the part of the general public toward the automobile. In most places there are trade associations and clubs, and in most places the trade association clashes with the club—one waits for the other to make a move, and neither moves. In New York the trade organizations and clubs vie with one another in doing something which will tend to promote automobilism, and if other clubs and organizations were to cut out and go it alone results would be forthcoming that would be surprising.





If Asa Goddard thinks Ohio has any bad roads, he ought to visit Illinois and see something in that line.

Lancia, having removed the hoodoo by winning the prix de Rome, will probably feel like tackling the Vanderbilt cup race again.

That open-air show at the Empire track was a regular circus, having everything from a balloon ascension to pink lemonade and popcorn.

They couldn't hold off at Washington very long. With the passage of the free alcohol bill and the prospective passage of a number of good roads measures it is evident the law makers are being attacked with automobilitch.

Those eastern automobile papers that were not wideawake enough to secure the current news concerning the Glidden tour should either admit being badly beaten by Motor Age or should keep silent. Casting reflections is a lame excuse for defeat.

London would like to make itself believe it is the center of the automobile universe, but it has forgotten there is a place called Paris and another called New York. It perhaps has not heard what Jim Hill said, too: "When the Pacific coast has a population of 20,000,000, Chicago will be the biggest city in the world."

## The Week

Glidden tour rules committee decided to change minimum weight limit, reducing it from 2,000 pounds to 1,700 pounds; Secretary Gorham goes to New York to consult Chairman Deming.

Grand prix details are arranged; start will be at 6 a. m. and cars will be started at 1 minute and 30 second intervals; course being oiled for contest.

Free alcohol bill passes senate and is now up to the president for his signature to make it a law.

Open-air show of New York dealers at Empire City track takes place; interesting contests are held and affair proves a success.

Plans for annual endurance run of Federation American Motorcyclists from New York to Rochester are announced.

Hill climbs are held at Indianapolis, Ind., and Worcester, Mass.; fast times made up steep grades.

Tour for Milan gold cup proves to be one of toughest ever undertaken by motorists.

Test of Napier gearless six-cylinder car in England results in successful demonstration.

## A MOTOR PHOTO CARTOON



W. J. MORGAN, COMMONLY CALLED SENATOR

Since automobiles have taken to climbing Dead Horse hill, is there any significance in the name attached to the grade?

It is now possible to do away with speed change gears, but it must be amusing to George Selden, George Day and the A. L. A. M. to read all the stories of these gearless trials and the constant use of the clutch, which is the mainstay of the Selden patent.

Now that the free alcohol bill has passed both the house and senate and the president has signed the measure, it is in order to give John D. Rockefeller a hunch—drop the price of gasoline so low that nobody will have the nerve to start making denatured alcohol.

People do not have to go to the Empire track to see an open-air show—all they need to do is to stand on Fifth avenue in New York or Michigan avenue in Chicago any old day and see all the open-air show desired. A few other cities might be mentioned if space permitted.

There's a man in Grand Rapids, Mich., who is deserving a medal. He is Police Judge Hess. He recognizes the fact that time, place and circumstances should govern decisions in all cases of infractions of automobile regulations, and he has announced a determination to be so governed in the future. There is nothing wonderful about this except the fact that this judge is strong-minded enough to be reasonable and fair enough to make the announcement. He is deserving of especial mention and commendation and some day he will be pointed out as one of the first to recognize the principles of common law as being paramount to the clamor of a prejudiced people.

Lock your gear change lever in the top speed notch and do something if you want to be in line nowadays on driving stunts.

The Automobile Club of France will probably wake up and feel the jolt when it reads the list of entries of French cars for the Vanderbilt cup race.

Maybe the open-air show of the New York dealers wasn't much, but it served as a pretty good starter for the right sort of a show at the right time of the year.

France shook the Vanderbilt cup race because its governing body thinks that three cars are insufficient to represent any country, "above all for France." Is it necessary for France to have a superabundance of entries to win?

It took a long time to bring about a change, but the motorists of Grand Rapids, Mich., finally convinced a police magistrate that automobilists were not put on earth simply for the purpose of being soaked.

During the month of April trolley cars, railroads, trains and horses were responsible for a total of twenty-two deaths in the state of Indiana. Not a life was taken by automobiles in the state during the same time. This may not please motorphobists, but Motor Age feels called upon to publish the fact, nevertheless.

## Coming Events

June 1-3—Electric vehicle competition, France.

June 6—New York Motor Club's orphan day.

June 9-15—Herkomer cup competition for touring cars, Germany and Austria.

June 13-14—Provincial cup touring car competition, France.

June 17-24—Week of Marseilles, France.

June 18-25—New York Motor Club's second annual economy test.

June 26-27—Grand prix race, Sarthe course, Automobile Club of France.

July 14-17—Automobile racing at Ostend, Belgium.

July 23—Start of Glidden tour from Buffalo, N. Y.

August 5-8—Touring car competition, France.

August—Circuit des Ardennes race, Belgium.

August 27-September 2—Brescia, Sicily, events. Automobile Club of Italy.

September 1-10—Auvergne cup competition, France.

September 2—Florio cup race, Brescia, Sicily. Automobile Club of Italy.

September 18—Touring car competition of Provence, France.

## LONG TOUR OVER ITALIAN ROADS

### Contest for Milan Gold Cup Proves Heart-Breaker—Tough Going Eliminates Many of Contestants—Lancia Wins the Prix de Rome—Macdonald, in Napier, Leads

Milan, May 14—Italy opened the ball of the great international 1906 tourist contests by the start today on the dusty Italian roads of forty-eight aspirants for fame and fortune, as represented by the Milan gold cup and its accompanying rich cash prizes. Only four of the fifty-two entrants cried off, the English Leader car, two French cars—one having been hung up in Sicily—and one of Italian make. The remainder gallantly commenced the endurance test of 2,420 miles over all sorts and conditions of routes, pledged, under penalty, to do a maximum speed, according to their class, of 22 to 25 miles per hour over 10 days' run, with an average of 250 miles per day. This gives an average of 10 days' continuous running of 10 hours per day. Add to the dangerous character of some of the stages the strain on the nerves of the competitors, and it will be seen that the task will be as tough for the men as for the mechanical products engaged. The gold cup is truly an international competition, for of the forty-eight starters, including many foreign makes domiciled in Italy, there are five French, three British, five German and three Swiss cars. The cars started today on the road to Bologna, distant 270 miles, at an early hour. The cars left at intervals of 2 minutes from 4 a. m., in the order given them by their number drawn by lot. Some little dissatisfaction is still expressed that the cars have been classed on the cost of their chassis instead of by the capacity of the cylinders. However, grumblers were lost in the general enthusiasm of the start, and by 6 a. m. all was again quiet.

Bologna, May 15—Forty-one of the forty-eight starters finished the first stage of the gold cup. The time at the given average of 25 miles per hour, was 10 hours 36 minutes. Thirteen cars managed to arrive at the control within the limit and were not penalized. The first arrival was Macdonald in a six-cylinder Napier, followed 3 minutes after by Cagno in an Itala. The next two arrivals were the Clement and Aries, both French makes. Cars which arrive over a minute before time are penalized twice the number of points which would be marked against them were they as many minutes late in arrival. On the road the Rapid burst a cylinder, a Peugeot car broke an axle and a Daimler car drove into a ditch. These were obliged to quit. The roads were good. The forty-one cars arriving yesterday were unlocked from the sealed garage this morning and at 4:30 the signal was given for the departure on the Rome road, 280 miles away, with poorer roads than those to Bologna. The order of arrivals

yesterday was the order of today's starts. The weather is changing, and the conditions are less favorable.

Rome, May 15—The second day is over, and the drivers and passengers in the cars over this stage are glad, for it rained throughout the journey. The hard stage was rendered all the more difficult on this account. However, the cars are being weeded out, for many of the starters have given up and others have arrived very late. The time given to cover the distance of 280 miles was 11 hours 18 minutes and thirteen out of thirty cars finishing managed to get in without penalizations. Macdonald in the Napier six-cylinder kept his lead with the loss of a minute or so, and Cagno, Marsaglia, Clement, and Lancia followed suit. Lionel de Dion collided with Lanfranchi. The latter kept on, but the former had to quit. The third stage started today at 10 a. m. It is only 152 miles long, one of the shortest. It extends down to Naples and the roads are notoriously bad and even dangerous. A further thinning of the lists is likely to happen. The bad weather still continues and the roads are becoming impassable for any but prize-seekers and glory-hunters. The natives encountered in the journey are quite friendly and do all they can to facilitate the passage of the caravan of cars.

Naples, May 16—In spite of the unfavorable conditions, thirty-one of the thirty-five starters arrived in Naples, and twenty-two cars of the thirty-one arrived in good time. Macdonald still leads, with Cagno and Lancia hanging on close. Pasquale, in a Benz-Parsival car, had a side slip which cost him dear, for he is seriously injured. Cariolato, in a Rapid, quit because of a smashed wheel. Marsaglia, hitherto in the first rank, has been disqualified owing to non-arrival inside the time limit allowed. Thirty-one cars started on the next stage, which leads back to Rome again by a detour. The hardest stage of the test is known to be Florence-Genoa and several of the competitors are cheerfully waiting this test of their powers. Up to the present they have had comparatively easy tasks.

Rome, May 17—Lancia has won the prix de Rome, having driven his car with the greatest regularity until now, a distance of 846 miles. Only three cars have finished the fourth stage with no points to their debit, these being the Lancia Fiat, the Grazziana Itala and the Vercellone Clement. The routes are still very poor, and although the distance in this stage was only 142 miles, yet only twenty-eight cars survived. Twenty-eight out of forty-

eight starters is a pretty good proof of the thoroughness of the test in the four first stages. Macdonald still holds the lead, and has only been penalized once during the journey. The Italian make of the Isotta Fraschini has been running with splendid regularity. The organization of the details of the contest leaves nothing to be desired, and the competitors are pleased with their reception at the end of each stage.

Florence, May 18—The start from Rome on the difficult fifth stage with Florence some 235 miles off, was made this morning at 4:30, Macdonald leading, followed by Cagno, Lancia, Trucco and Vercellone. The average of 25 miles an hour over 9 hours 17 minutes was with difficulty maintained by the smaller-powered cars, and the number arriving at Florence in the afternoon at the hour expected was rather small. Only twenty-seven cars finished within the regulation time, of which nine were penalized. The leaders maintain their relative positions. Only three cars have thus far escaped penalization throughout the five stages. Macdonald has been penalized 22 seconds this time, his car having been prevented from arriving at the control by the crowds. This probably will be overlooked, however, by the committee. The contest has been marked by a regrettable incident. Romolo de Pasquali, who was the victim of an ugly fall in the third stage—Rome-Naples—has died from the effects. He was a well-known sportsman and fervent motorist, and drove the Italian Benz. He had a bad slip in a sharp turn on the road, and the machine butted against a tree, fracturing M. Pasquali's skull.

#### TEST OF GEARLESS CARS

London, May 19—Interest here at the present time seems divided between a contemplation of the effects of the French motor car strike and of the gearless car. Up to the present time the strike did not affect trade on this side. In some instances deliveries have been so bad that a stoppage of this kind would not be felt until some time later; in others the French manufacturers managed to get through completed stuff sufficient to satisfy the demand. The agents of one of the largest French manufacturers here circulated their customers to the effect that they find it necessary to advance prices 10 per cent on account of "expensive handling, cost of transit," etc. This would seem to be a feeler on the part of the French manufacturers, intended to obtain the opinion of their British customers.

The record of the gearless car in the test of 1,000 miles, which it underwent under the auspices of the automobile club, has been published. The following report, signed by the technical committee, may be of interest to those who are curious on this matter on your side:

The test was made to demonstrate the possibility of driving on top speed only over a dis-



tance of 1,000 miles in all conditions of traffic and over ordinary roads. The car weighed 1 ton 15 cwt. 1 qr. and carried four passengers, weighing, in addition, about 6¼ cwt. The record of performance on the road is as follows:

May 7—Engine stopped unintentionally in traffic three times .....	3 min.
Two stops to adjust number plate .....	3 min.
Stop to put in gasoline .....	3 min.
May 8—Drain plug came out of carburetor .....	54 min.
Engine stopped unintentionally .....	1 min.
May 9—Engine stopped unintentionally .....	1 min.
Tire trouble on road. Burst .....	1 h. 17 min.
May 10—Stops to tighten contact maker spring and change over two accumulators .....	30 min.
Tire trouble on road. Burst .....	50 min.
May 11—Engine twice stopped unintentionally in traffic .....	3 min.
Number of days occupied .....	5
Average daily mileage .....	203
Total consumption of gasoline .....	113 gals.
Average mileage per gallon of gasoline .....	8.98
Total consumption of lubricating oil. Included in this are the tests at Bexhill .....	4¾ gals.
Total consumption of grease .....	2 lb.

Remarks—The chassis was the standard six-cylinder 60-horsepower Napier type with live axle, direct drive on top speed with fourteen-tooth driving bevel pinion, and forty-three-tooth driven bevel wheel, the ratio being thus 3.09-engine to 1, wheels.

All the hills were climbed satisfactorily, it being found necessary to slip the clutch on only two or three occasions when the car had been impeded by traffic.

For the purpose of this trial the second speed pinion was removed, the first speed being of necessity left in position to enable the car to be reversed, but the change speed quadrant was so sealed as to prevent the use of the first speed without such use being at once apparent.

Sundry stops were made each day for meals, convenience and traffic.

The car was lubricated, cleaned and adjusted each night in the depot.

The tests given the car were thorough. One of the remarkable points brought out was that the car could travel slow enough to keep pace with pedestrians.

The usual amount of dispute regarding the possibility of a gearless car fashion seems imminent. Those who have not a six-cylinder car out of which they might eliminate the gear box, and those who do not find themselves in a position to produce a gearless car, flout its practicability. But the idea is gaining ground that 1907 will see a great many gearless cars about, especially when engines of 40 horsepower and upwards are fitted. There is really no necessity that engines of those powers should have more than one forward speed and reversing gear. But there will have to be some very great improvements in engine design before the gearless low-powered car will become a success.

### TESTS HEDGELAND AXLE

London, May 18—The judges' report of the trial of the Hedgeland axle, an importation from your side claimed to minimize side slip and to obviate the necessity of the differential gear, has been issued by the automobile club after 1,000 miles' trial. The report generally is satisfactory and states that the axle conferred an appreciable immunity from side slip and skidding, did its work well and without signs of wear, the only drawback being the impossibility of using the engine as a brake.

## FIX GRAND PRIX ROADS

### Sarthe Course Swept and Prepared for Final Coat of Bituminous Oil—To Start at 6 A. M.

Paris, May 18—Arrangements for the grand prix are proceeding apace. It now has been decided that the start shall be made at 6 o'clock each morning, at 1 minute 30 seconds' intervals. This is a shorter allowance than in other big races, but in this way it is expected that the thirty-four contestants can get away from the starting point in 51 minutes. As the complete circuit is just about 65 miles, this will give only a few minutes' respite before the speedier cars complete the first circuit. The roads are now being swept and put into condition before the goudronage is laid down. This year heavy bituminous oil will be spread over, in more than one coat, over a width of 18 feet of road surface. Recent races have had the routes laid with westrumite, a composition laid over with water instead of oil. Goudron, as it is called here, is the crude mineral oil, and is not the variety extracted from wood. It is calculated to withstand heavy rains for weeks at a time and also withstand the strains consequent upon the passage of the cars.

The refusal of the prefect of the Sarthe to allow any racing cars in the district during the period of preparations has banished the drivers from the circuit, for few are taking advantage of the permission to cover the circuit in tourist cars, however high-powered. The Germans, however, are always there, indefatigable in their efforts to obtain a thorough knowledge of the circuit. The tribunes have not begun to make their appearance. The passage over the fields at St. Calais is being laid down, none too soon. It almost seems that the strike has rather held people's hands somewhat in the matter of preparations, which, however, are again going merrily forward.

It is announced here that the Mercedes people are unable to turn out their six-cylinder cars in time for the grand prix and in consequence will go into the race with last year's racers, which can be obtained either by purchase or courtesy. Of course the greater number of last year's racers—at least the best—were long ago disposed of and many would not be available. It is understood, however, that Jenatz's machine, which was acquired by the late Clarence Gray Dinsmore, will be loaned to the firm, and Signor Florio has telegraphed offering his Mercedes racer. The fact, however, is not significant, for the Mercedes people are rather noted for cutting their calculations rather fine in the matter of delivery, and it must not be supposed that many, if any, firms are in the same predicament as the Mercedes as regards this year's racers.

The lists for the grand prix were closed on the 15th and no further entries had been received. None, however, was expected. With the exception of the Mercedes, the remainder of the participants state they will be ready in time for the event. A movement has been on foot to endeavor to obtain authority to establish government-controlled betting booths on the circuit. This is known as the "Pari-Mutuel," which has never been yet allowed in connection with French races other than horse-racing. It is stated that this would bring at least 50,000 more people to the circuit and consequently more money into the district. The French automobile club is pledged to bring the matter to the attention of the government. This class of betting is permitted in all other Continental countries on the automobile race courses.

### TURN DOWN ROAD IDEA

London, May 18—The Roads Improvements Association here, a body that has been in existence for the past 15 years with the object of keeping road constructors and contractors up to their duty as defined by law, and generally to provide good roads for cyclists, has now become the hand-maiden of the motor movement and assumed an importance which cycling could never give it. It recently approached the local government board with various proposals regarding the construction and upkeep of roads, including a demand for dustless road construction, experimental work toward that end, a further contribution of \$5,000,000 annually from the imperial exchequer for the upkeep of main roads with government supervision as to its dispensation. These are comprehensive enough, but the local government board reply has been equally comprehensive. The board does not propose to do more than consider the question of dustless road construction, which is equivalent to hanging it up in chancery. With regard to the other points the government board will not contemplate any legislation at the present time.

### CONSIDER POSTPONING TOUR

Paris, May 19—The German automobile club yesterday formulated a request to the race commission handling the European circuit tour to the effect that, in view of the damage and delays caused by recent strikes, the event would be more advantageously held in the spring of 1907. The meeting, which occupied an hour and a half, appeared to concur in the opinion expressed by the Imperial Club, and it was resolved that the request should be presented to the international executive committee of the European circuit, which alone has the right to take any valid decision. It may confidently be stated that the European circuit will in all probability be postponed to next spring because of the reasons stated above.

## WILL TAKE OFF WEIGHT

### Glidden Tour Committee on Rules Will Cut the Minimum from 2,000 to 1,700 Pounds

Chicago, May 29—Sidney S. Gorham, secretary of the American Automobile Association, leaves for New York tomorrow to hold a consultation with Chairman Deming, of the touring committee, regarding the report of the sub-committee which drafted the rules for the Glidden tour of the A. A. A.

That the consultation will result in a change being made in the minimum weight limit goes without saying, for the storm of protests which followed the announcement in *Motor Age* that the sub-committee had decided on 2,000 pounds impressed the committee that the kickers had good ground for complaint. L. E. Myers is chairman of the committee, but when the storm broke he was out of town, so Secretary Gorham took it upon himself to talk to his colleagues by wire. He strongly advocated reducing the weight limit to 1,700 pounds, but it was not because he believed in the reduction himself. He still contends that a touring car worthy of contesting for the Glidden trophy should weigh at least 2,000 pounds, but in order to be just to all makes as far as possible he was willing to compromise and take off 300 pounds. Mr. Hower, of Buffalo, felt as he did and threw his vote in with Gorham's.

Chairman Myers, however, was at first firm for 2,000, but his colleagues finally won him over to their way of thinking, and he announced his willingness to abide by whatever action they took in the matter. Therefore, it is more than probable that the reduction to 1,700 pounds will be made at the conference between Gorham and Deming.

"I believe there will be few other changes made in the rules," said Secretary Gorham today as he was preparing for his trip east. "I am confident we have drafted rules that will meet all conditions and think they will be acceptable to the touring committee. We are going to eliminate that clause concerning gasoline consumption—the one requiring each contestant to report each night the quantity of gasoline he used during the day.

"More trophies are needed and if we can get them we will provide cups for the various classes. You understand, of course, that this weight limit does not bar lighter cars from taking part in the tour. Far from it. Everyone is welcome and the more the merrier, be they runabouts or commercial trucks, only those not complying with our weight restrictions cannot compete for the Glidden trophy. There will be other trophies, however, that will be open to them and that's why we want to put up the class cups. These will be awarded according to price,

the cars being divided into classes, as they are in hill-climbs and beach meets. We are also going to put up a trophy for commercial cars, of which we expect to have several for use in transporting the luggage of the tourists."

Secretary Gorham has received word from Buffalo that Vice-President F. B. Hower, of the Buffalo Automobile Club, accompanied by Secretary Dai H. Lewis, of the club, and Laurens Enos, also a member of the club, departed recently from Buffalo to map out the best route between that city and Saratoga Springs for the contestants in the Glidden tour. Mr. Hower is the representative of the Buffalo Automobile Club on the touring committee of the American Automobile Association. Mr. Hower has arranged to make a report on the route to the touring committee. All the contestants will be in Buffalo on the evening of July 11, when the Buffalo Automobile Club will entertain them. In addition to the contestants there will be many automobilists who will be there for the purpose of witnessing the start. There will be many others who will make the tour, but who will not do it as contestants.

### JUDGE WITH GOOD SENSE

Grand Rapids, Mich., May 29—The long-drawn-out war between the automobilists and police of Grand Rapids has been brought to an abrupt end. Police Judge Frank E. Hess, before whom all the automobile cases are brought, has come to the front as a friend of the automobilists and has signified an intention of dealing with violators of the statute according to conditions existing at the time of arrest. In a recent decision he said hereafter he will take into consideration the condition of the street as to traffic, the time of day and the rate of speed. Heretofore officers have brought automobile law violators into court by the score and they have been dealt with merely as law-breakers. Judge Hess says he will not punish severely in case the street is clear at the time of the arrest; in case the speed is only slightly over the limit he will also deal leniently. This means a lax enforcement of the statute, a thing for which the drivers of this city have been striving since the inception of the automobile crusade in April, 1905.

### ENGLISH FLOTATIONS

London, May 19—Only two flotations were announced this week. One was an exploitation of the Anglo-French Herald Co. on the English market for \$375,000 and the other another bus flotation for \$500,000, apparently designed to provide the Anglo-French Herald Co. with its best customer. Both are being severely handled by the financial press. The Edge flotation seems to be definitely off. At least Mr. Edge has stated in the press that the shares of his company are privately held in the family.

## LONG GRIND FOR F. A. M.

### Details of Fifth Annual National Endurance Event for Motor Cyclists Is Arranged

New York, May 28—Details of the annual national endurance contest—the fifth—to be conducted by the Federation of American Motocyclists and which, as usual, will constitute the prelude to the F. A. M. meet, which this year takes place at Rochester, July 4, 5 and 6, have been definitely arranged.

The start will be made from New York at 4 o'clock a. m. on Monday, July 2; the first day's destination will be Little Falls, 228.8 miles; the second day's travel will be from Little Falls to Rochester, 145 miles. The total distance is 373.8 miles. The east shore of the Hudson river will be followed to Albany, thence the contestants will go via the Mohawk valley to Rochester, the end of the trip.

There will be but five controls—Poughkeepsie, Albany, Little Falls, Syracuse and Rochester—but checkers will be established at Peekskill, Hudson, Amsterdam, Utica and Lyons. The times will be taken only at controls and the awards will be based on the arrival times at those points.

In a general way, the same plan and the same rules that obtained in last year's contest will apply on this occasion. The schedule will be based on a speed of 15 miles per hour, but 30 minutes' leeway will be permitted, which is more generous than heretofore. Thus, although on the 15 miles per hour reckoning, the contestants are due to reach Poughkeepsie, for instance, at 9:12 a. m., the leeway of 30 minutes when divided in equal parts makes the maximum or earliest time of arrival 8:58 a. m., and the minimum or latest time of arrival, 9:28 a. m.

To obtain the awards for perfect performance, competitors must reach each control within the allotted 30 minutes. Owing to the liberal limits, no allowance will be made for variations of watches. As is apparent, tardiness at a single control renders a perfect score impossible, but to make it worth while pressing on to the finish, survivors' award will be given all belated contenders who reach the night controls within 5 hours of the minimum schedule times of arrival at those points.

The route is one that will test the caliber of both men and machines. The road from New York to Albany is a succession of ups and downs and beyond that point there is sand enough to enable any rider to demonstrate that he is a "worthy competitor," although remnants of cycle paths still exist in many places to relieve the monotony.

The entry fee will be \$5. H. J. Wehman, 108 Park Row, New York, will be in charge of the entry list, which will close June 25. Entrants must be, of course, either members of the F. A. M. or hold



certificates of registration issued by the competition committee; as naturally, the F. A. M. limit of 5 horsepower will be adhered to.

M. E. Toepel, chairman of the committee on roads and tours, has well in hand the plans for the F. A. M. annual tour which will follow the route of the national endurance contest from New York to Rochester. The tourists will leave New York on Saturday afternoon, June 30, and will be due to arrive in Rochester, Tuesday evening, July 3. E. H. Corson, the New England member of Mr. Toepel's committee, is organizing and will be in charge of a Boston party which will join with the New York contingent at Albany. A booking fee of \$1 will be imposed, the proceeds of which will be expended for a bronze memento of the tour.

#### BILL UP TO ROOSEVELT

Washington, D. C., May 25—Special telegram—The free alcohol bill is now on President Roosevelt's desk awaiting his signature. It passed the senate successfully, although a few amendments were tacked on, necessitating it going back to the house for concurrence. That body acquiesced and the measure will soon be a law. The axiom, "keeping everlastingly at it brings success," was never better illustrated than in the passage by congress of the tax-free alcohol bill. This has been a subject that has been presented to the national legislature for years and the advocates of a law to secure tax-free alcohol for use in the arts and industries and for fuel, light and power, with every successive defeat, have hobbled up serenely, determined to win out some day. Their efforts have at last been crowned with success, for the United States senate, on May 24, without division, passed the alcohol bill as reported the previous day from the finance committee.

#### MORE GOOD ROADS BILLS

Washington, D. C., May 25—Good roads bills continue to pile up in congress, the latest being fathered by Representative Sheppard. It provides that the office of public roads in the department of agriculture be authorized and directed to advise with the proper state and local authorities having jurisdiction over the roads used for rural free delivery of the United States mails as to the best methods of maintaining them in a passable condition throughout all seasons of the year, to suggest necessary alterations, relocations and improvements, and wherever desired by the community tributary to such routes to cooperate in the manner now pursued by said office in the construction of such sections of object-lesson roads along said routes as are necessary properly to illustrate suitable methods of construction and maintenance, and to inspect and report the conditions of said roads to the post-office department whenever asked to do so.

## FIX IT UP FOR FRANCE

### First Five Cars in Grand Prix Can Represent French in Vanderbilt, Commission Says

New York, May 29—Special telegram—The A. A. A. racing board will not be put out any by the action of the Automobile Club of France in refusing to accept French nominations to the Vanderbilt cup race. Even when the news was at first whispered around that the A. C. F. would back up on the proposition little fear was felt that the action would discommode the Americans, for the A. A. A. has several aces up its sleeve, as was proven yesterday at the meeting of the commission, which was attended by Chairman Thompson and Messrs. Vanderbilt, Thomas, Butler, Lippert and Batchelder. After giving the matter due deliberation the commission decided to accept the entries of the French cars in the order of their finish in the grand prix which will be run over the Sarthe course June 26-27.

Chairman Thompson will witness the running of the grand prix, having booked his passage on the Baltic. While in Paris he will arrange for the receipt of the French entries and will forward them to the American Automobile Association.

It is expected that the reply of the Automobile Club of France to the letter of the Automobile Club of America, the international correspondent of the American Automobile Association, asking as to the former's action in withdrawing from participation in the race, will be received before Mr. Thompson's departure. The racing board chairman says he is not surprised at the action of the French club, as its withdrawal from the Vanderbilt race is only consistent with its withdrawal from the Bennett contest.

Five entries to the Vanderbilt race from American makers have been received and were announced at the meeting. They are the Pope-Toledo, Oldsmobile, Frayer-Miller, B. L. M. and Mathe-son racing cars.

In discussing the Vanderbilt cup course, the commission debated over the scheme of building a short-cut road at the S turn at Albertson's. The idea seems feasible and may go through. It will be necessary, of course, to secure the consent of the owner of the property, but this, it is said, will be easy to get, for the Long Islanders are enthusiastic over the race and are willing to do anything reasonable to make it a success.

From Paris comes a cable stating that on the report being received there that the officials of the American Automobile Association were nonplussed at the refusal of the French club to receive entries to the Vanderbilt great surprise was expressed. The secretary of the French club, asked for a statement, said that the whole position was very simple. When

the A. C. F. decided last year not to race any more for the international cup it likewise decided not to contest officially for the Vanderbilt cup, as the conditions of the two races are similar. The French club therefore decided to leave makers entirely free to send independent entries to the race or through the L'Auto, which has undertaken to forward entries. The general objection of the French club to the Vanderbilt and similar races is that the French do not consider three machines a fair allowance for any nation, above all for the French.

#### CLEVELAND'S HILL CLIMB

Cleveland, May 28—On Decoration day there will be a hill climbing contest here. It will be on Gates' Mills hill, where the club held a closed contest last year for members exclusively. This year the event will be open to every one. Secretary Asa Goddard believes it will rank with the Eagle Cliff and Dead Horse hills in the future. Gates' Mills hill is over a mile long and a mile course has been surveyed, which shows an elevation of nearly 450 feet to the mile. The hill has been leveled off and an electric timing device will insure accurate timing, something which the club did not have last year when the local event was won by Frank B. Stearns in a 40-horsepower stripped touring car of standard design in 1 minute 19½ seconds, which was considered remarkable time considering the condition of the hill, which was badly cut up. The event this year is certain to attract a large crowd, as the hill leads up from Gates' Mill valley, one of the most beautiful spots in northern Ohio. There is a traction line to the village, so those enthusiasts who cannot come in automobiles will take the cars.

#### MUST CARRY LIGHTS

Buffalo, May 29—Automobiles in Buffalo must be equipped with lights at night hereafter or the owners will be arrested and taken into court. Superintendent of Police Reagan, of this city, has issued a general order that the law governing the display of lights must be enforced. The law requires that every automobile shall display two white lamps at night, the lamps to show the number of the vehicle. The penalty for the violation of the law is a fine not exceeding \$25 for the first offense in exceeding the speed limit.

#### FRENCH CHAINS SEIZED

London, May 17—A sensational trading incident occurred during the past week, when \$5,000 worth of chains reputed to have been manufactured in the Peugeot factory in France, but assembled in Birmingham, were seized by the Birmingham police under a warrant issued for infringement of the merchandise marks act. This act insists upon an indication of the places of origin on any manufactured article imported into this country.

# UP DEAD HORSE AND GLEN VALLEY HILLS



HALF WAY UP DEAD HORSE HILL

**W**ORCESTER, Mass., May 26—New England's first big hill-climb this year was held on Dead Horse hill Thursday, more than seventy-five cars taking part in the annual affair. It was an interesting competition, but the card was such a big one that darkness came on before the last one had been pulled off. This necessitated the postponement of some of them and so S. B. Stevens' Darracq was given an opportunity to make a time trial today to beat the mark of 1 minute 9½ seconds established 1 year ago. A. L. Campbell was at the wheel and so skillfully did he handle the big brute and so powerful was its motor that the Vanderbilt cup car went up the grade in 51 minutes 1½ seconds. Campbell was not the only one to try for the mark.

The hill-climbing drew an immense attendance. That a most serious accident did not occur was due to the kind care of Providence. A narrow lane was made nearly the whole length between two embankments, to mount which in many places required the agility of an athlete. The police were conspicuous by their inactivity. A circular race track meet is harmless compared with this.

In the most closely contested event on the bill James P. Grady, driving a 20-horsepower Pope-Hartford, won the honors in the class for stock cars selling between \$2,000 and \$3,000, beating among others C. W. Kelsey in a 36-horsepower Maxwell; Barrett, in a 24-28-horsepower Columbia, and Wilson, in a 35-horsepower Rambler. Eddie Bald, in a 35-horsepower Columbia, ran second to Duryea, in a 50-horsepower Stevens-Duryea, in the class for gasoline stock cars selling from \$3,000 to \$5,000. An English Daimler, driven by Harding, scored in the amateur event for stock cars selling from \$3,000 to \$5,000, but the

officials recognized the apparent mistake in allowing a car listing at \$9,000 to get out of its class in this way, so the honors went to John Shepherd, Jr., of Providence, who finished second in a 40-45-horsepower Columbia. The Reo came into prominence through a brace of victories, the Lansing machine defeating good fields in two of the events.

A woman was also prominent in the climb, Mrs. H. Ernest Rogers, of Brookline, taking three firsts in a 10-horsepower Maxwell. Summaries of the meet were as follows:

## EVENT 1—AMATEUR CHAMPIONSHIP OF WORCESTER COUNTY; STOCK CARS

Make and driver	Cy.	HP.	Time
Stanley, H. F. Grainger...	2	20	1:31
Pierce, M. P. Whittall...	4	45	2:01
Pope-Hartford, M. E. Dixon	4	25	2:15
Stearns, R. M. Garfield...	4	45	2:36

## EVENT 3—STEAM STOCK CARS

Stanley, Baldwin	20	1:26
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## EVENT 4—GASOLINE STOCK CARS; LIST PRICE \$850

Maxwell, Mrs. H. E. Rogers	2	10	3:31
Maxwell, Ralph Coburn...	2	10	3:45 2-5
Crawford, Crawford	2	10	4:04 1-5

## EVENT 5—AMATEURS; STOCK CARS; \$850 AND UNDER

Maxwell, Mrs. Rogers...	2	10	3:23 2-5
Maxwell, Ralph Coburn...	2	10	3:46

## EVENT 6—GASOLINE, STOCK CARS; LIST PRICE \$850 TO \$1,250

Buick, H. J. Kohler...	2	22	1:52
Reo, R. M. Owen...	2	16	2:01 2-5
Buick, B. N. Crockett...	2	22	2:11
Reo, F. H. Pratt...	2	16	2:26

Jackson, D. F. McArthur...	2	20-24	3:07
Jackson, M. F. Schouffer...	2	20-24	3:30 2-5

## EVENT 7—AMATEURS; GASOLINE STOCK CARS; \$850 TO \$1,250

Reo, Pope	2	10	1:58 2-5
Buick, M. P. Whittall...	2	22	2:41
Reliance, W. H. Baker...	2	22	4:04

## EVENT 8—GASOLINE STOCK CARS; \$1,250 TO \$2,000

Crawford, G. M. Weatherbee	4	24-28	2:56 1-5
Maxwell, Stockbridge	2	16	3:25 1-5
Queen, R. Driscoe...	4	26-28	ditched

## EVENT 9—AMATEURS; STOCK CARS; \$1,250 TO \$2,000

Reo, Thomas	2	16	2:11 2-5
Crawford, Poor	4	24-28	3:12 1-5
Franklin, Miss Des Roches	4	12	3:35

## EVENT 10—GASOLINE STOCK CARS; \$2,000 TO \$3,000

Pope-Hartford, Grady...	4	20-25	1:50
Maxwell, Kelcey	4	35	1:57 2-5
Columbia, Barrett	4	24-28	2:05 1-5
Rambler, Wilson	4	35	2:17
Columbia, Maxim	4	24-28	2:19 2-5
Marmon, Wing	4	30	2:27
Pope-Hartford, Whittle...	4	25	2:49
Oldsmobile, Allen	4	26	2:55
Marmon, Ash	4	30	3:19
Jackson, Blake	4	40-45	3:39
Stoddard-Dayton, Sprout...	4	35	6:19

## EVENT 11—AMATEURS; STOCK CARS; \$2,000 TO \$3,000

Marmon, Emerson	4	30	2:26 2-5
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## EVENT 12—GASOLINE OR STEAM STOCK CARS; \$2,000 TO \$3,000.

Rambler, Wilson	4	35	2:15 4-5
Marmon, Wing	4	30	2:24 2-5
Marmon, Ash	4	30	3:00

## EVENT 14—GASOLINE STOCK CARS; \$3,000 TO \$5,000.

Stevens-Duryea, Duryea...	6	50	1:14 3-5
Columbia, Bald	4	35	2:00
Thomas, Miller	4	50	2:04 3-5
Pope-Toledo, Elliott	4	40	2:05 2-5
Pope-Toledo, Whittle	4	40	2:16
Stearns, Read	4	40	2:18 1-5
Royal Tourist, Baker...	4	40	2:38 4-5
Royal Tourist, Church...	4	40	2:41 4-5
Jackson, Blake	4	40	2:57 2-5

## EVENT 15—AMATEURS; STOCK CARS; \$3,000 TO \$5,000.

Columbia, J. Shepard, Jr...	4	40-45	1:54 4-5
Pope-Toledo, Elliott	4	35-40	2:15
Pierce, Whittall	4	45	ditched

## EVENT 16—GASOLINE STOCK CARS; \$5,000 AND OVER.

Napier, R. E. Traiser...	6	60	1:37 4-5
Fiat, E. Hill, Jr.	4	50	1:38 2-5

## EVENT 17—AMATEURS; GASOLINE CARS; MORE THAN \$5,000.

De Dietrich, J. R. Harding	4	80	1:19 1-5
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## EVENT 18—GASOLINE CARS, HEAVYWEIGHT CLASS

Stevens-Duryea, Rem'gton	6	50	1:10
English Daimler, Harding	4	35-40	1:12
Napier, Hilliard	8	80	1:14
Pope-Hartford, Grady	4	25	1:28 1-5



HOW THE VISITING CARS LINED THE ROADWAY AT WORCESTER



Darracq, Campbell .....	4	80	1:34
Columbia, Maxim .....	4	24-28	1:36
Berliet, Gray .....	4	65	1:41 2-5

## EVENT 19—CARS 851 TO 1,432 POUNDS

Stanley, Baldwin .....	20		1:06 4-5
Stanley, Rogers .....	20		1:13 2-5
Columbia, Maxim .....	4	24	1:35
Buick, Kohler .....	2	22	1:43 4-5

## EVENT 20—STOCK CARS, 551 TO 851 POUNDS

Maxwell, Mrs. H. E. Rogers .....	2	10	3:02
Maxwell, Coburn .....	2	10	3:13

## EVENT 21—CARS WEIGHING MORE THAN 2,204 POUNDS

Berliet, Gray .....	4	60	1:16
Rambler, Wilson .....	4	35	1:58 2-5

## EVENT 22—FREE-FOR-ALL CLASS

Darracq, Campbell .....	4	80	1:02
Stevens-Duryea, Hancock .....	6	50	1:09 2-5
Napier, Hilliard .....	4	80	1:13 2-5
Premier, Moore .....	8	100	1:37

## EVENT 23—OPEN TO ALL MAKES OF GASOLINE CARS

Darracq, Campbell .....	4	80	1:02 1-5
Berliet, Gray .....	4	60	1:10 1-5
De Dietrich, Downey .....	4	80	1:23 2-5
Rambler, Wilson .....	4	35	2:06

## EVENT 24—SPECIAL RUNABOUT CLASS

Corbin, Markel .....	4	24	1:57 2-5
Corbin, Kimball .....	4	24	1:59 3-5
Prayer-Miller, Burrage .....	4	24	2:42
Buffum, Breed .....	4	24	2:50 1-5

## MOTOR CYCLES

Indian, Kellogg .....	1	1/4	1:15 2-5
Indian, F. Hoyt .....	1	1/4	1:17
Marsh-Metz, A. Hoyt .....	1	1/4	1:17 3-5

## INDIANAPOLIS HILL CLIMB

Indianapolis, Ind., May 24—Out on Glen Valley hill, 8 miles south of this city, where daily horses meet their "climbaloo," the first hill-climbing contest of any importance ever held in Indiana was held today. In every respect it was a record-breaking affair and a new mark for negotiating the hill was set when Edgar Apperson in a 40-horsepower Apperson reached the crest of the hill in just 31½ seconds. Apperson won two of the ten events on the program.

There were all of the details that combine to make a hill climbing contest successful. The hill road, though heavy with dust, was in really good condition. A telephone system was installed connecting the starting and finishing points, and so accurately did it work out that timers at each end of the hill were able to record the same time to the fraction of a second.

Had it not been for a farmer, who se-



CROWD AT THE INDIANAPOLIS CLIMB

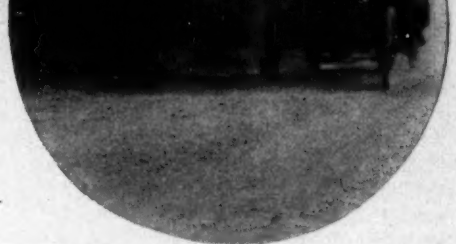
cured a reserved seat on a fence post, hanging his coat on the telephone wires, the contest might have started promptly. But the farmer in his enthusiasm threw his coat over the wires and another delay was caused in repairing the line.

Edgar Apperson in a 40-horsepower Apperson was the first one up the hill in the opening event, the free-for-all owners' race with the owners driving. His time, 31½ seconds, was not touched by any of the other contestants during the afternoon, although Frank Moore in a Stoddard-Dayton in the stock car contest for cars listed at from \$2,000 to \$3,000, made the hill in 32½ seconds.

S. W. Elston in a 12-horsepower Franklin won the second event, covering the course in 36½ seconds, no other car in the class coming within 18 seconds of the time. The Franklins made an excellent showing in several of the other events.

In the third event, open to runabouts weighing from 1,432 pounds to 2,204 pounds, a 22-horsepower Buick, running against three Premiers, tied with a Premier for first place. It is probable that this tie will be run off later.

The prettiest contest for the lot was the event for stock cars listed at from \$2,000



FOUR-CYLINDER NATIONAL FINISHING

to \$3,000, when Frank L. Moore, of the Fisher Automobile Co., in a 35-horsepower Stoddard-Dayton piloted his car up the steep grade in 32½ seconds, followed by several other cars, all negotiating the hill in less than 40 seconds. The events and the time made in each follow:

Owner's race—Won by Edgar Apperson, 40-horsepower Apperson; time, :31 1-5. William L. Carr, 22-horsepower Buick, second, time, :41 2-5. W. G. Wall, 30-35-horsepower National, third; time, :42.

Runabouts weighing under 1,432 pounds—Won by S. W. Elston, 12-horsepower Franklin; time, :35 3-5. Harry Stutts, 12-horsepower Franklin, second; time, :53 4-5. Will Davidson, 10-horsepower Cadillac, third; time, :57 4-5.

Runabouts weighing from 1,432 to 2,204 pounds—First place tied by J. Whittle, 22-horsepower Buick, and W. Waltman, 20-horsepower Premier; time, :42. Frank Brown, 16-horsepower Premier, third; time, :43 2-5.

Touring cars weighing from 1,432 to 2,204 pounds, carrying three passengers and driver—Won by Frank L. Moore, 30-35-horsepower Stoddard-Dayton; time, :36 2-5. J. Whittle, 22-horsepower Buick, second; time, :46. W. Cherry, 20-horsepower Leader, third; time, :48 2-5.

Touring cars weighing over 2,204 pounds, carrying four passengers and driver—Won by Howard Marmon, 30-horsepower Marmon; time, :40 4-5. Jap Clemens, 30-horsepower National, second; time, :45 4-5. Harry Stutts, 28-30-horsepower Peerless, third; time, :47 2-5.

Stock cars listed \$850 and under—Won by W. Cherry, 16-horsepower Leader; time, :50 3-5. F. M. Willis, 10-horsepower Maxwell, and W. Davidson, 10-horsepower Cadillac, tied for second; time, 1:00 3-5.

Stock cars listed from \$850 to \$1,500—Won by J. Whittle, 22-horsepower Buick; time, :37 2-5. J. Waltman, 16-horsepower Premier, second; time, :40 3-5. W. Cherry, 20-horsepower Leader, third; time, :42.

Stock cars listed from \$1,500 to \$2,000—Won by S. W. Elston, 12-horsepower Franklin; time, :39 1-5; Lambert, 30-horsepower Lambert, second; time, :42 4-5. Harry Hammond, 20-horsepower Premier, third; time, :43 3-5.

Stock cars listed from \$2,000 to \$3,000—Won by Frank L. Moore, 35-horsepower Stoddard-Dayton; time, :32 1-5. Howard Marmon, 30-horsepower Marmon, second; time, :36 3-5. Jap Clemens, 30-horsepower National, third; time, :38 4-5.

Stock cars listed above \$3,000—Won by Edgar Apperson, 40-horsepower Apperson; time, :33. Harry Stutts, 30-horsepower Peerless, second; time, :45 2-5.

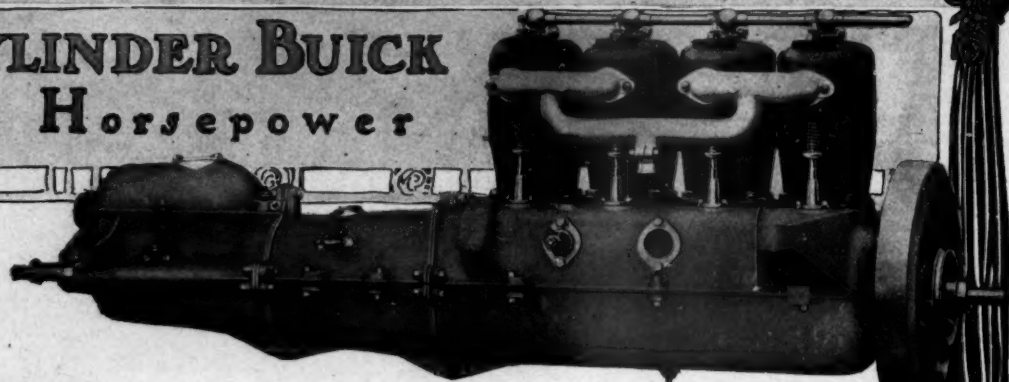


JUDSON STARTING IN THE WORCESTER HILL-CLIMBING CONTEST

# AUTOMOBILE DEVELOPMENT

## FOUR-CYLINDER BUICK

### 30-35 Horsepower



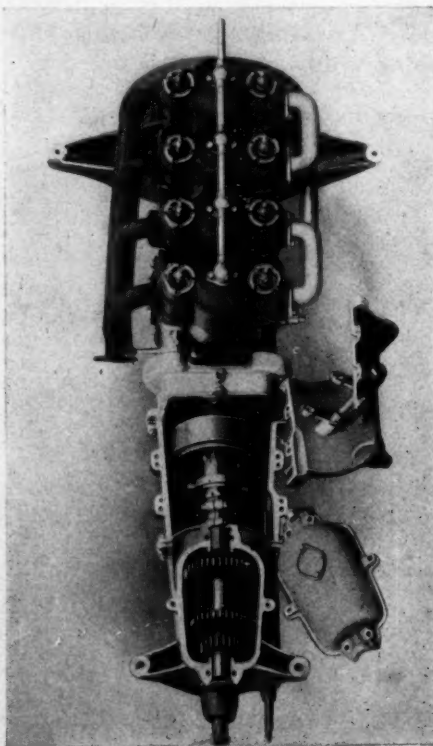
**T**O the many Michigan manufacturers designating 1906 by beginning the manufacture of four-cylinder cars, is added the Buick Motor Co., Jackson, Mich., which sets a pace of its own by adopting in its product for this season many points of construction not general in American motor car build. Notable among these is the use of unit casework for housing the motor crankshaft, the multiple disk clutch and the sliding gearset, the design of the Stevens-Duryea, St. Louis, Dorris and the Mora being similar except that the first three use a three-point suspension, the Mora a continuous support along the side frame pieces, whereas the Buick makes use of a five-point suspension. The Buick product, styled model D and rated at 30-35-horsepower, with cylinder bore and stroke  $4\frac{1}{4}$  and  $4\frac{1}{2}$  inches respectively, possesses most of the earmarks characteristic of four-cylinder, vertical, four-cycle, water-cooled motors. Regarding the unit case: It consists of three sections; the forward section, occupying the entire front half of the casing, comprises the motor crankcase; in rear of this is the clutch compartment, the flywheel being at the front of the motor, and a disk clutch being used allows of the diameter of this compartment being peculiarly small; and, third, the gearcase, small and compact, with the secondary shaft placed directly above the mainshaft and a separate shaft for the reverse pinions. Aluminum is used throughout in the case. The opposing ends of the crankcase and clutch part have large flanges, by which the parts are bolted together, and with the aid of similar flanges and bolts the gearcase part is in turn attached to the rear of the clutch compartment. The two forward compartments, the crankcase and clutchcase, are divided horizontally, whereas with the gearcase portion the top is a large inspection plate which, when removed, allows of the secondary shaft of the gearset being taken out. In supporting this case are employed four integral arms; two exceptionally long ones at the forward end of the crankcase part, these arms extending laterally so as to rest upon steps of the side pieces of the main chassis frame, a subframe not being needed. The rear support is in the

form of two similar shaped arms, though much shorter, which rest on small steps secured to a crosspiece of the frame. The fifth support is a central one in front. To add rigidity to this three-part, unit-case construction small web braces stretch between the flanges and the base of the case where each two of the three parts come together. Apart from reversing the general style of motor design by placing the flywheel in front, the Buick people have gone a step further by placing the half-time gears for driving the camshafts at the rear of the back cylinder housing them entirely within the crankcase, their presence being indicated only by small expansions in the crankcase beneath the rear side of the back cylinder.

Users of motor cars, as well as designers, have indulged in much speculation concerning the feasibility of the unit-case construction. In favor of it is the absolute alignment of the motor crankshaft, the clutchshaft and the shaft in the gearset, the only parts of the car open to mis-

alignment being from the rear of the gearcase to the back axle and in which universal joints are provided for the taking up of any alignment discrepancies. With this design all parts can operate in oil; the flywheel, of necessity, must be in front and the power and transmission plant are generally very compact. Critics have not permitted this unit-case construction to come without it feeling the keen edge of their scrutiny. At first they vouched that supporting so heavy a casing at the front and rear would mean a sagging in the center, which translated meant false alignment of the different shafts, strain on the casing and inevitable rupture of the parts. These criticisms have been offset by the record of cars embodying this design, in which, after a couple of years of varied service, none of the above claimed defects have appeared. The unit case has been put to supreme tests and has not been found wanting.

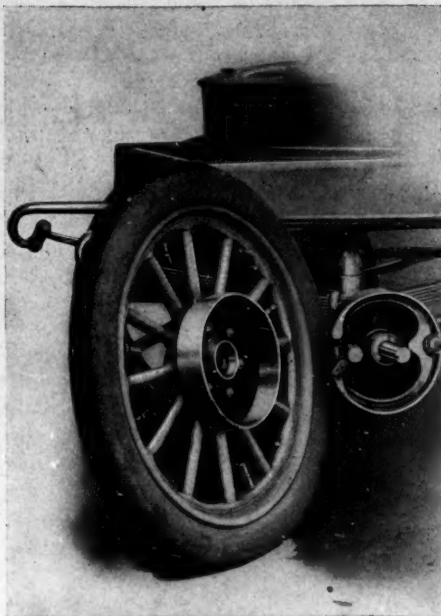
Passing to a more detailed review of the motor: Each cylinder is a separate casting, having all parts of it in one piece; that is, both valve ports, water-jackets, cylinder heads and walls made integral. Placing the inlet valves on the right and the exhausts opposite necessitates the need of two camshafts, both of which are completely housed within the crankcase, being supported on bearings in the bottom part of the case and taking their oil for lubrication from the common splash within the case. Perfect interchangeability of the valves is featured. The valves with their stems, the pushrods, the caps covering the tops of the holes in the valve ports as well as the valve springs can alike be used on the inlet or exhaust side, according as necessity dictates. The accessibility of either valve set is assured by the screw caps in the port heads. In one set of caps, that over the inlet valves, are carried the spark plugs and in the other sets, similarly located, are compression relief caps. Within the cylinders a grinding process has been used for finishing that part of the wall traversed by the piston rings. The rings also have been ground. The pistons, of the straight-side, flat-top variety, carry



UNIT PLANT OF BUICK



all of the rings, three, well above the wristpin and close to the piston head. The crankshaft, a drop forging of selected steel, is carefully balanced, has its five bearings ground, uses straight throws, they being imperative because of placing a bearing between every two cylinders. Connecting rods of I-section are made non-adjustable at the piston end, but at the crankshaft end carry a bearing cap held in place by a pair of bolts with nuts and cotterpins for security. The flywheel has a taper fit on the forward end of the shaft, a key also being used. In the water circulation a special Buick design of radiator provides the cooling surface and forms the front of the bonnet. From this water is drawn by virtue of a pump gear-driven off the exhaust camshaft and is delivered to the several waterjackets at a point immediately below the exhaust valves, presumably the hottest part of the cylinders, or as close as possible to the hottest parts. The return flow is from the tops of the cylinder heads to the radiator top. A belt-driven fan located closely in rear of the radiator, is driven from the crankshaft. Ignition is by jump spark, current coming from a storage battery and reserve set of dry cells. Distribution is by a standard, positively-driven commutator and the current is "stepped up" by a quadruple coil. In the lubrication of the motor a mechanically-operated force-feed oiler plays the leading role. It supplies a sufficiency for the five crankshaft bearings and maintains the splash level within the crankcase constant. The exhaust piping is a one-piece manifold extending downward from the front cylinder to the base of the dash and joined intermediate by branches from the three rear cylinders. The mixture furnisher is a Buick carbureter, of which nothing definitely is known. Mixture passes from it through a combination Y piping, neces-



BUICK BRAKE DESIGN

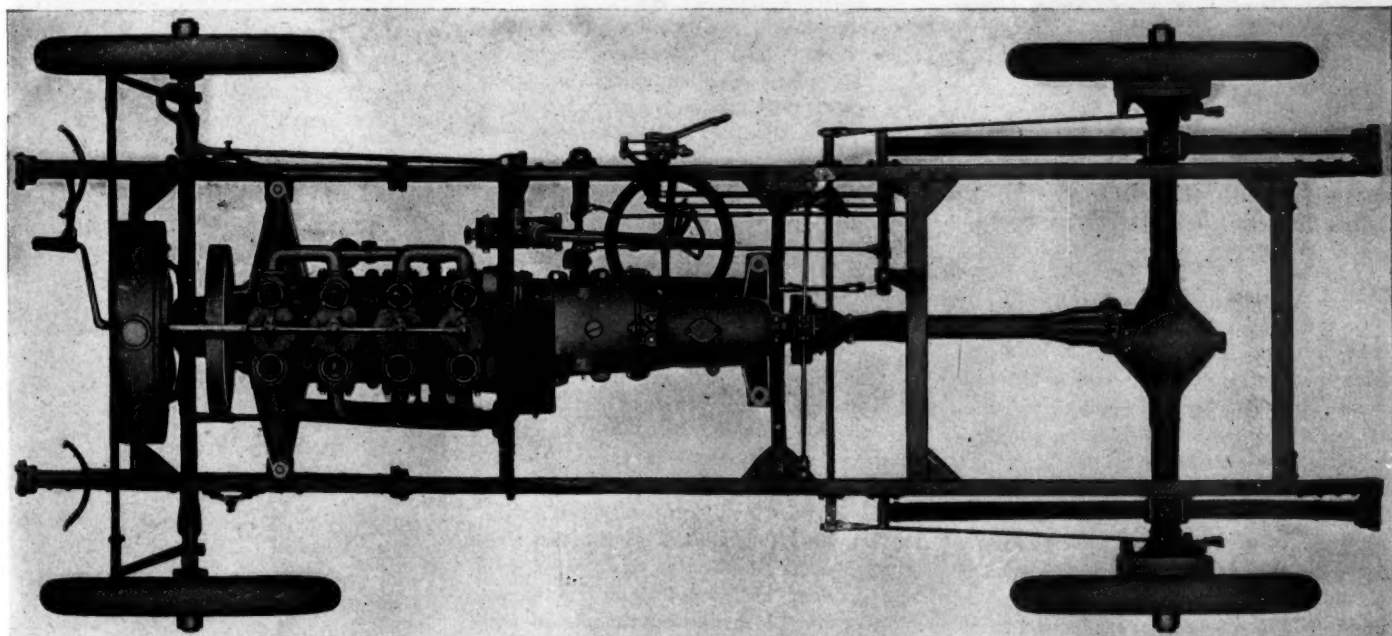
sitating the mixture to each cylinder traversing an equal length of tubing.

Examining the transmission parts: The clutch, of the multiple-disk type, consists of eight circular metal disks arranged in two series, one alternate with the other. One series is carried on the crankshaft and the other on the clutchshaft to the gearset. In one series of plates are four metal disks covered with leather on both sides. A stout spring assures engagement and the presence of the leather facing robs the clutch of any desultory gripping, making engagement smooth and gradual. The disks are enclosed in a drum-like casing within the clutch compartment of the unit casing and as it does not operate in oil the central part of the unit casing is absolutely protected against oil entering from the crankcase in front or the gearcase to the rear. For disengagement is

a collar on the sliding sleeve on the clutchshaft, there being two pins placed diametrically opposite in this collar. From the top of the clutch compartment cover depend two arms with yoke ends for receiving these pins. A pedal serves to disengage. As shown in one of the illustrations, when the top of the clutch casing is removed the two arms with yokes for shifting the clutch, as well as the shaft to which the clutch pedal is attached, come off with it.

The gearset of the straight sliding variety affords three forward speeds with one for a reverse movement. All are commanded by a lever to the right of the driver, this lever, together with that for the emergency brakes, being located at the right center of the footboard and occupying normally a vertical position. Plain bearings are used for all shafts within the case. The sliding gears are carried on the mainshaft in the bottom of the case and the shifting rod, placed centrally to the right, reposes in an expansion of the case at that part, it having the benefit of operating in oil. The secondary shaft of the set is removed with its gears through the cover opening of the case. All gears are made of carefully selected material and are extra large with good width of face. Lubrication is by an oil bath. Final drive is by an enclosed propeller shaft, a torsion rod not being used. To the rear of the gearcase is a universal joint, carefully housed, and the regular brake, of the contracting type, operates on a drum wheel surrounding the rear end of the shaft from the gearcase. The differential housing is made with a large removable top cap which, when taken off, the entire gear trains are in view for examination. Within drums on the hubs of the rear wheels are expanding bronze shoes forming the emergency brakes.

Control of the motor speed rests with



PLAN VIEW OF BUICK, MODEL D, 30-35-HORSEPOWER CHASSIS, SHOWING UNIT MOTOR, CLUTCH AND GEARCASE



NEUSTADT ELECTRIC HORN

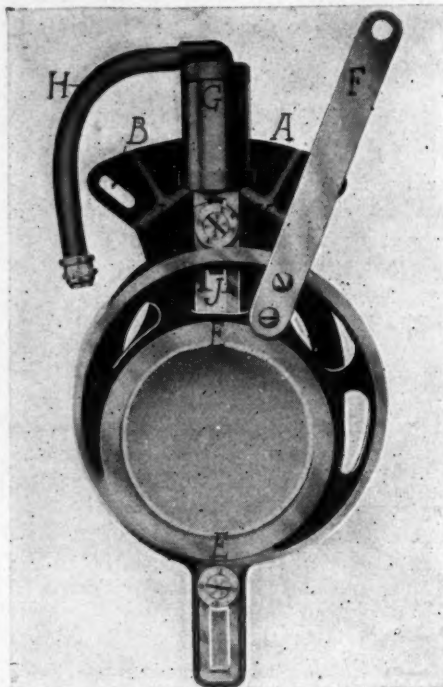
the spark and throttle. Finger levers for both of these are mounted on the steering wheel, the steering column being of the concentric tube variety to accommodate the different rod and connecting mediums needed for coupling the levers with the throttle valve and commutator. The segment on which these levers operate is not susceptible to the turning movement of the steering wheel. The regular brake is pedal applied.

In the running gear, the use of straight channel, cold rolled, steel side pieces of the chassis frame is noticeable, as is the elimination of a subframe. Crosspieces are strengthened by the addition of gusset plates riveted in position. Springs are of the semi-elliptic type, those in front carried beneath the frame pieces and the rear pair offset. The wheelbase measures 102 inches, wheels are 32 inches in front and rear, a uniform size of tire, 4-inch, is fitted and the equipment is 1906. The body, which is not illustrated herewith, is distinctly of the straight-line type, having individual front seats and tonneau accommodation for five adults. The bonnet with gilled sides hinges from the top, both sides rising when opened; the top of the radiator is slightly rounded and a similarly rounded hollow metal dash is at either side continued backwards at the base, forming a low side to the foot-board. Front fenders are made specially rakish with a leather flap between the wheel and body. The back fenders are small. Connecting those fenders in front and those in rear are short running boards, on which are carried the battery boxes.

#### PUMPS AS CAR RUNS

Two illustrations of the Hibbard tire pump marketed by McCord & Co., Old Colony building, Chicago, suffice to show how it appears when attached to an automobile wheel; also what different parts constitute it and how it operates. As shown attached to the wheel, the pump is a circular device which encircles the wheel hub and has a barrel part placed radially to the wheel hub like one of the spokes. In this barrel part is a common plunger piston which acting in conjunction with check valves pumps air to the tire. The

pump can be left on the wheel while running on the road and in case a puncture occurs and the driver does not want to stop and make the repair the revolving of the wheel operates the pump plunger and air is constantly being pumped into the tire. In case the tire has to be filled while the car is standing still the wheel is jacked up and the engine started, causing the jacked-up wheel to revolve, so filling the tire. With a front tire the car can be started running and the inflation accomplished. The other illustration, A, shows a metal framework that is rigidly attached to the spokes of the wheel by hooks passing through openings B, only one of which can be seen. These hooks clamp the piece A firmly in position and cause it to revolve with the wheel. Over



HIBBARD AUTOMATIC TIRE PUMP

this piece A is an eccentrically-mounted piece E, to which is attached the handle F. This piece remains stationary when the wheel revolves and generally has a string from the hole in the outer end to the car fender, as shown in the illustration, for preventing it revolving. The pump cylinder G is the same as any pump barrel and connects with the tire valve through the piping H. The piston operating within the barrel G is worked through the piston rod L which works within a yoke piece J which serves as a guide. On the piston rod is a wheel K bearing on the outer surface of the eccentric piece E. It can be seen that if the piece A on the pump is turned to the right the piston, which is now at the top of the barrel G, will gradually fall to the bottom until the point E of the eccentric is reached, at which time the piece A will have made a half revolution. In the remainder of the revolution the piston will be once more raised to the top of the bar-

rel G. Thus in every revolution of the road wheel the piston will travel from the outer to the inner end of the barrel and back again. On the first stroke air is sucked into the barrel and on the second this same air goes into the tire.

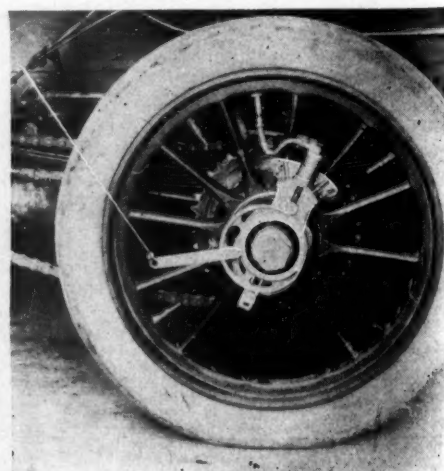
#### NEUSTADT ELECTRIC HORN

The Neustadt Automobile & Supply Co., St. Louis, Mo., is placing on the market an electric horn which, in general, resembles all horns of this variety. The illustration shows the horn to be of the cornet style with the electric apparatus portion removed and placed to the right. The large end of the horn into which this screws is facing in the foreground. The vibrating portion is a diaphragm, the same as used in the ordinary telephone. An electro-magnet is used in producing the vibration, the current for exciting the magnet coming from a storage battery or dry cell. The wire from the battery to the horn passes by way of the steering post. On the wheel is a push button for closing the circuit to blow the horn. The vibrations of the vibrator are transferred to the diaphragm through a rod surrounded by a coil spring the rod being pulled toward the diaphragm by the force of the magnet and as soon as it hits the diaphragm the circuit is broken and the spring throws the rod back again. The sound produced by the horn is similar to that produced by the bulb horn and while musical to practically the same extent is also equally efficient for warning purposes and very easy of operation.

#### MOTOR CAR LITERATURE

"Little Economies" or the "Hughes Idea" tells in a dozen pages about the proper management of a factory, designing of manufacturing plants and a multitude of other facts that confront the average builder. It is published by M. L. Hughes & Co., 324 Dearborn street, Chicago.

Drake, Kincl & Co., 211 Madison street, Chicago, have a small book which tells all about their foresight visible spark plug. The information is complete.



HIBBARD PUMP ON WHEEL



# Current Automobile Patents

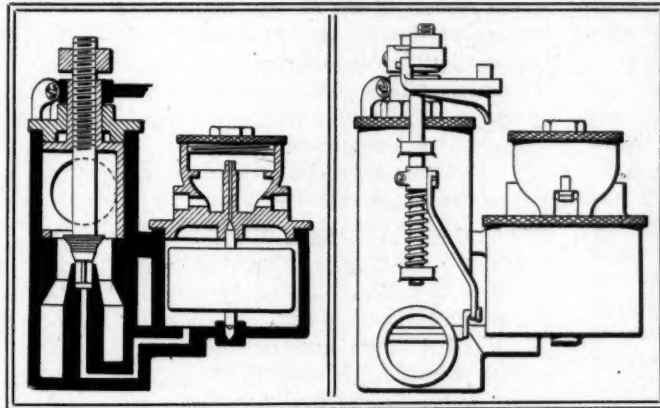
**Combination Road Wheel**—No. 821,213, dated May 22; to A. C. Birkin, Nottingham, Eng.—The illustration shows this wheel to consist of two parts, an outer one of two opposed metal disks entirely enclosing the sides of the wheel and carrying at the perimeter of these disks a solid rubber tire on which the wheel travels over the ground. Within this is an ordinary type of road wheel with opposing disks, which serve the purpose of spokes, and a pneumatic tire carried at the perimeter of these disks. The disks supporting the solid rubber tire have an elastic connection at the hub so the pneumatic tire constantly contacts with the rim carrying the solid tire at the point of support. The outer tire, of solid rubber, affords good traction without puncturing difficulties and the inner pneumatic tire provides the elasticity.

**Acetylene-Gas Generator**—No. 820,993, dated May 22; to J. R. Shirreffs, Amesbury, Mass.—Of the various parts entering into this generator that containing the carbide first catches the eye. It takes the form of a wire basket, of coarse mesh, suspended in the center of the middle chamber and having ample room beneath for the ash to drop into. The basket is removable vertically through the top of the generator. A water tank surrounds the gas chamber and above the carbide basket is a part of the tank having just sufficient capacity to slake all of the carbide. The water drips onto the carbide basket from a part of the tank having just sufficient capacity to slake all of the carbide. The water drips onto the carbide through a V-slot in the top of the carbide chamber. Beneath this slot is a wire mesh to aid in distributing the water.

**Air and Throttle Control**—No. 821,081, dated May 22; to P. H. Brennan, Syracuse, N. Y.—In the left view of this carbureter is shown the float chamber at the right, the inlet mixing chamber at the left and the outlet port from the top of the mixing chamber. The right view shows a circular opening in the base of the mixing chamber through which air enters. A valve controls the air opening and also the outlet to the motor. A connection exists between both of these controlling valves so that opening or closing one produces an opening or closing effect on the other. The relation of the opening or closing of one valve can be varied with respect to the opening or closing of the

other valve so the driver can furnish fresh air or mixture in any desired quantities.

**Mechanical Oilier**—No. 821,266, dated May 22; to T. L. and T. J. Sturtevant, of Wellesley, Mass.—Within this lubricator casing, near its bottom, is a conical distributor driven by bevel gears from a horizontal driveshaft entering the side of the reservoir casing. This distributor with its flaring base receives oil through a top central vertical pipe and distributes it to any number of sight feed through sets of pockets that it passes over, these pockets



TWO VIEWS OF BRENNAN CARBURETER

being in the base of the reservoir. The oil is pumped into the reservoir through a single plunger pump worked from the bevel on the end of the driveshaft. Ball valves control the entrance of the oil.

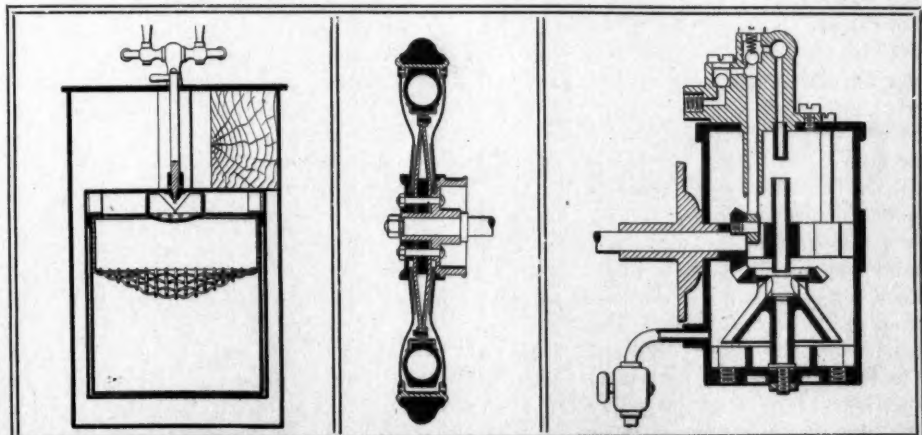
**Edison Battery Grid**—No. 821,032, dated May 22; to Thomas A. Edison, West Orange, N. J.—This battery grid is intended for a storage cell employing an alkaline electrolyte and iron and nickel as the active agents. The grids carry pockets for the iron composition. Another series of grids have pockets for the nickel compo-

sition. The grids for the nickel are placed in pairs between the individual grids for the iron composition. The volume of nickel carried in each grid is the same as that of the iron in each grid.

**Control for Sliding Gearset**—No. 821,161, dated May 22; to E. B. Gadsey and G. P. Dorris, St. Louis, Mo.—Attached to the sliding gears within the gearset for getting the different speeds is a horizontal bar with a series of semi-circular notches on its top surface. When the gears are moved this bar moves with them. Secured to the clutch pedal is a bell crank rocker arm with a roller on the end of the crank portion adapted to enter the notches on the horizontal bar previously mentioned. With a gear in mesh the clutch can be engaged, the roller on the bell crank entering a certain notch, but only when gears are in perfect mesh can the roller enter a given notch. In this way it is impossible to change gears with the clutch engaged, and it is also impossible to engage the clutch until the gears are perfectly in mesh.

**Pullman Automobile Sleeper**—No. 821,154, dated May 22; to E. P. Brewer, Spokane, Wash.—In a tonneau touring car with side entrances the backs of the front seats are hinged so as to fold back forming with the bottoms of the front and back seats a couch much the same as in the standard Pullman railroad coach.

**Pedersen Lubricator**—No. 820,821, dated May 15; to J. T. Pedersen, New York city—This lubricator, of the sight-feed, mechanically-operated type, has any desirable number of feeds. The oil is pumped by reciprocating pistons, one for each sight feed. The cylinders in which these pistons work are supported on a movable framework, which framework is oscillated so the opening into the base of the plungers registers at one time with a passage into the reservoir so oil can pass into the cylinder in the up stroke of the piston, then register with the pipe leading to the bearings, so on the piston's down stroke the oil is free to be forced into this lead.



SHIRREFF'S GENERATOR

BIRKIN'S WHEEL

STURTEVANT OILER



### ONE TAG FOR QUAKERS

On Thursday last Philadelphia's council's committee on police and fire decided to report favorably Councilman Seeds' bill for a repeal of the local ordinance requiring automobilists to take out a city license in addition to a state license. There was a large representation of automobilists in the committee room, among them William Dick, the president of the Automobile Club of Philadelphia; Robert P. Hooper, treasurer of the Automobile Club of Germantown, and several others. Mr. Seeds, who introduced the repealer, was the first speaker. He explained that the city license enforced a hardship on automobilists, inasmuch as the state law guaranteed all safeguards that the city ordinance had been framed to require. The state law, he said, was more stringent in its provisions and in every way superior to the city legislation and rendered the latter unnecessary. Because of the city license those operating cars are put to great inconvenience changing license tags when coming into and leaving the city. The committee was evidently impressed by Mr. Seeds' remarks and admitted the injustice of the double tax. Some of them, however, feared that the wagon owners would object, as they also pay a license fee; but Mr. Seeds swept this objection away by saying that that bridge could be crossed when they came to it. A letter from Director of Public Safety Potter was read in which he favored the repeal, but called attention to the difficulty which the payment of about \$1,000 for 1906 city license fees might raise. Persons who had already taken out license fees might want their money back, and it was suggested that the repeal be made to take effect January 1, 1907. But the automobilists were up in arms in an instant at this suggestion. President Dick said that the duplicate tag nuisance could not be done away with unless the repeal went into effect at once. "It's the bother of the tags the automobilists object to," he said, "and I don't believe any one will ask to have his money returned." After some further discussion, during which it was recalled that the state law calls for a minimum speed in cities of 10 miles an hour, whereas the local ordinance specifies 8 miles, the repealer was unanimously recommended, the slight difference between the two laws in this particular being insufficient to warrant any objection upon the part of any of the committee.

The committee also discussed the siren

and Gabriel horn, and after listening to the opinions of Messrs. Seeds and Dick on the subject, it was the unanimous opinion that the "honk" horn met every requirement as a warning signal and did not have an alarming effect on horses.

The same afternoon council's committee on law favorably reported a bill requiring all automobiles operated within the city limits to carry drip pans or some similar device to prevent the dripping of oil upon the highways. The measure had been introduced by Councilman Bringham at the request of the Society for the Prevention of Cruelty to Animals, and was indorsed by the road drivers', liverymen's and automobilists' organizations as well. It was asserted that oil on asphalt pavements caused great danger to horses, and many instances were cited where valuable animals had been injured.

### SYRACUSE CASE NON-SUITED

The case of Thomas Tallerico against the Bell Telephone Co., at Syracuse, N. Y., resulted in a non-suit. Some of the officials of the telephone company engaged an automobile and chauffeur from the Amos Pierce Co., of Syracuse, last April, to inspect some construction work being done between Utica and Syracuse. At Utica a trolley car stopped just as Tallerico and the automobile came up. In the mix-up Tallerico was severely injured. In dismissing the case, Judge Rogers decided that the automobilists were not guilty of negligence and that the plaintiff was not free from contributory negligence.

### ROASTS A JUSTICE

President William Dick, of the Automobile Club of Philadelphia, scored off Squire Fitzwater, of Springfield township, Montgomery county, last Thursday, when Judge Swartz, in the county court at Norristown, sustained his appeal from a fine imposed by the squire on the ground that the latter's docket was "irregular and defective." Mr. Dick had been apprehended for exceeding the speed limit, and Justice Fitzwater had been decidedly brusque and arbitrary, imposing a fine without giving Mr. Dick an opportunity of making a defense. For the good of the cause the defendant decided to carry the case to a higher court, and had no difficulty in bowling the squire out. Judge Swartz, in handing down his opinion, said: "If the speed limit be exceeded by automobilists, it is right and proper that they pay the penalty for the protection of life and property; but they must be proceeded

against in a legal manner. It is useless to make these arrests unless some attention is given to the legal requirements of a valid hearing and judgment. If the magistrate is careless we cannot cure his defective proceedings. If he lacks the necessary information to conduct a valid proceeding it is an easy matter to qualify himself by study and inquiry. His attorney, no doubt, will be glad to give him a form that he can use as a guide in the conduct of the hearing and the making or a record under the facts produced at the trial. Whether the defendant in this case violated the ordinance of the township is a question of fact which is not before us, and we do not mean to express an opinion upon the subject." It is expected that this decision will put a stop to the 2-minute hearings, the main object of which appears to be the collection of the fine and costs.

### CAR OWNERS HAVE RIGHTS

Judge Wheeler, in the Council Bluffs, Ia., district court, sustained the contention of automobile drivers that they should have the same considerations on public highways as others. He instructed the jury to bring in a verdict in favor of former Alderman L. A. Casper in a damage suit brought by Mrs. Isabel Dorsett, of Crescent, for injuries received in a runaway accident, when her horse became frightened by Casper's automobile.

The accident occurred on Upper Broadway, on June 2 last. Mr. and Mrs. Dorsett, both elderly people, were preparing to return home, and Mrs. Dorsett was sitting in the buggy waiting for her husband, who was in a store, when the automobile came along. The testimony showed that the machine was running slowly and that all precautions were taken by Casper, and who, it was further shown, bore all the expenses and did all he could to repair the damage.

At the close of the plaintiff's testimony the court sustained the motion for an instructed verdict.

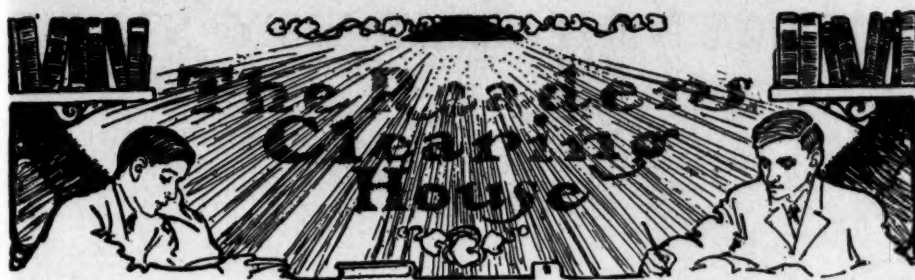
### NEW VIRGINIA LAW

Under the new Virginia automobile law, which was passed at the last session of the general assembly, before automobilists from other states can enter Virginia it will be necessary for the owner or operator to obtain a permit and number for his machine from the secretary of the commonwealth at Richmond, the cost being \$2. This permit must be shown to all toll-gate keepers, who make records of the time the machines pass and the direction in which they go.

### BAY STATE BILL SIGNED

The automobile bill for Massachusetts has been signed by Governor Guild and will be in effect on June 23 next. The chief features are that the speed is limited in the open country to 20 miles an hour, to 12 miles in towns and 8 miles in the thickly built up parts.





### SIX-CYLINDER MOTORS

Newark, N. Y.—Editor Motor Age—I desire some information regarding six-cylinder motors and will be pleased to receive this through the columns of the Readers' Clearing House. What is the best practice in placing the throws on the crankshaft, that is, which two pistons travel together and how far apart are the throws? What should be the difference in weight in flywheel of six-cylinder and four-cylinder motors having the same bore, stroke and compression?—George E. Goddard.

The rule is to make what would be two three-cylinder crankshafts, with the two inside throws set together, in other words, the two inside throws are together, the two middle throws together and the two outside throws together. Opinions vary in the matter of firing. The Frayer-Miller fires the two end cylinders first, then the two next and the two in the middle last. The Ford fires 1, 2, 3, 6, 5, 4, and the Stevens-Duryea fires 1, 4, 2, 6, 3, 5. The Franklin flywheel on the six-cylinder motor weighs about 60 pounds, that on the Stevens-Duryea 90 pounds, that on the Frayer-Miller 110 pounds. The maker of the last named uses the same weight of flywheel on the four-cylinder motor, but it is 20 inches in diameter, while the flywheel on the six-cylinder is only 18 inches in diameter. The six-cylinder motor is not sufficiently developed to bring all makers to a common standard; there is considerable difference in opinion among designers as to flywheel weights and other matters. Regarding the six-cylinder motor, as compared with other sizes as to flywheel weights and torque, A. Cyril Hutt, an English engineer, had this to say before the King's Engineering Society recently: "At normal and high speeds a single-cylinder motor will give a very steady torque, or turning pull, if a flywheel is fitted, as the steadying effect of a flywheel depends on its mass and the square of its velocity. At low speeds the flywheel is of little use; it would have to be very heavy to have much effect on the torque. If a motor, then, is required to run at slow speeds, the sequence of explosion must be depended upon to give a steady pull. The torque of a four-cylinder engine falls to and remains at zero for an appreciable amount of time. This is due to the torque produced at the end of the firing stroke being less than the torque required to compress the charge in the other cylinder, whereas the torque pro-

duced by a six-cylinder motor never falls below .5 of the maximum, and the torque of an eight-cylinder motor never falls below .6 of the maximum. By fitting a suitable flywheel it is possible to make a single-cylinder engine run as smoothly as a six-cylinder. The weight of the flywheel of a six-cylinder engine is usually about 20 pounds. Below are given the weights of flywheels of engines with different numbers of cylinders, in order that they may run as smoothly as the six-cylinder engines. Eight-cylinder engine, 15 pounds; six-cylinder engine, 20 pounds; four-cylinder engine, 90 pounds; three-cylinder engine, 2 hundredweight; two-cylinder engine, 4 hundredweight; single-cylinder engine, 10 hundredweights. Thus it will be seen, according to Mr. Hutt, that a single-cylinder motor would have to have a flywheel weighing 10 hundredweight to run as smoothly as a six-cylinder motor with a 20-pound flywheel.

### LOSS OF POWER

Shenandoah, Ia.—Editor Motor Age—I have a Marr runabout which has given me a great deal of trouble and I seek a little information. I cannot get the car to run well on high speed. The compression seems good, there are no leaks in the valves or rings, there is plenty of power when the motor is running at high speed on low gear or reverse, but when I throw in the high gear the power drops and the car will not run over 300 yards. I have tried the muffler, taken it off entirely, but with no better results. I thought it might be with the valve setting. Please tell me how the valves ought to be set in order to obtain the best results. The machine is geared rather high—eight teeth on the small sprocket and forty-two on the large—but the car ran splendidly when new, about 3 years ago. When the throttle is opened quickly there is a puff back into it and sometimes the car will not pick up speed when the throttle is opened gradually. Please give instructions on setting the valves.—B.

If the valve setting has not been altered since the car was first used, the trouble is not here; if there is no loss of compression and there appear to be no leaks, the trouble is evidently in the carbureter adjustment. But the fact that there are carbureter explosions indicates that there is a leak around the valves. See that the valves are carefully ground to a smooth seating; clean the cylinders with kerosene, leaving a little in the cylinder over night; put in a new battery

and adjust the vibrator to this new condition and then give attention to the carbureter. The fact that the motor lags and that it does not respond quickly when the throttle is opened indicates too rich a mixture. This is further indicated by the fact that at high motor speed the engine appears to develop power. At high speed it naturally would use more gasoline than at lower speeds. Cut the supply of gasoline. The inlet and exhaust cams being on the same shaft in a Marr, if one was correctly placed it is reasonable to suppose both are correct. The exhaust valve should open when the piston has completed nine-tenths of its power stroke and should remain open until it arrives at the upper dead center. The inlet valve should open just as the exhaust valve closes and should continue to a point 8 per cent of the stroke on the compression stroke. If the values are set near these figures the motor ought to give results.

### CAUSE FOR MISSING

Salt Lake City, Utah—Editor Motor Age—One of the cylinders on my two-cylinder Ford misses explosions frequently. The spark plug becomes covered with soot and requires frequent cleansing. This is particularly the case when I have been running the car at slow speed through crowded streets or when climbing a grade. Changing the spark plugs does not alter the condition. Is the fault with the cylinder? Can you suggest a remedy?—Subscriber.

It would be well to clean both cylinders thoroughly, using kerosene to cut the oil and carbon deposits. If the plug fouls with simply soot, that is easily rubbed off, the carbureter is feeding too much gasoline; if there is oil on the plug, cut down the oil supply. The fact that the motor does not pick up readily and that it does not miss on high speeds when running light, indicates a rich mixture. Clean the carbureter, be sure the float valve closes and cut down the supply of gasoline. Be sure, however, to see that you have a good set of batteries and that the coil is adjusted to the good batteries.

### VALUE OF PATENTS

Churchville, Md.—Editor Motor Age—Please state through the columns of the Readers' Clearing House what a patent is worth. I can make a horn that will sound by touching a button and without battery.—H. G. L.

Motor Age could not venture an opinion on the value of a patent—it might be worthless and there might be millions in it. Take it to some automobile supply house and see what is offered for it. The value of a patent depends solely on the field for which it is intended. The larger the radius of prospective sales the more valuable it is, providing, of course, the device possesses exclusive merit. A patentable device must first be thoroughly tried out to prove its value, and on the success attending these trials depends the money value of it.

# THE STORY OF A RECENT FLEXIBILITY STUNT



NEW YORK, May 26—Keeler took his pajamas. Thereby hangs the whole story. Kipling some years back had a mabit of making a start on his stories and then switching with the copyrighted remark—"but that is another story." Not so Keeler's pajamas, even though this is the story of the Oldsmobile palace touring car high-gear-sealed-in run to Poughkeepsie, N. Y.

Of course everybody said it could not be done. Didn't Snutsel tell his wife to have 7 o'clock dinner ready as usual? Didn't Ferguson tell his wife to take a 2-day trip, long planned for his first absence from the city, because he wouldn't be home that night, but would be rocking, fore and aft, in some valley between two hills en route with the car and its driver, making effort after effort to get a rush on that would carry up the approaching side of the valley? And Clinton, the owner—had he not promised the twins he would be home by sundown to show them the original landing place used by Dobbs for his ferry across the Hudson river? And, if these be true, can they claim to have thought Poughkeepsie would be reached on that high-gear-sealed-in?

Keeler is new among us. Maybe that accounts for it. At any rate he counted his chickens before they were hatched and contrary to the usual result, he correctly counted every chick. His western enthusiasm, coupled with the confidence he had in his car, gave him a clear vision and he could peer far enough ahead into the future to see a successful outcome for this adventure, the very latest in the east, and new, too. It speaks well for the originality of the promoter when he can bring out something no one else has tried, for New Yorkers never let a chance escape to put out something out of the ordinary which will attract the attention of the public and gain for the enterprising one that space in the newspapers that cannot be bought for love or money. When Keeler put a snug package into the car and told the others that it contained his pajamas and that he intended sleeping in them that night and furthermore that his bed would be no other place than the hotel at the other end, everyone laughed, for Keeler was known to be afflicted with optimism, especially when it came to anything in which the

## Details of the 75-Mile Trip of An Oldsmobile with Gear Lever Locked in the High Speed Notch and Carefully Sealed Entire Distance

Oldsmobile figured. Keeler knew himself and he knew his car.

But Keeler—only he took his pajamas. What more proof need be furnished that only he knew the car, high-gear-sealed-in and all, would land at the hotel headed for—75 miles from the start. And Keeler was right; the affidavit of the committee members on board vouches for him.

At the starting point, Fifty-first street and Broadway, New York, the gear lever was pushed into high speed position by Ferguson, who then wired it into place and next sealed the tie in the wire. This was done to the time of clicking cameras and followed by the starting of the motor. With Joe Tracy at the wheel the clutch was soft pedaled into engagement and at 12:25 p. m. the start was made with Keeler alongside Tracy, General Cutting back of Keeler, Snutsel next and Ferguson back of Tracy, with a full view of the gear lever and its seal. Nearing the upper end of the island Tracy turned the wheel over to Keeler and dismounted from the car and Clinton, the owner, transferred from another car with General Cutting, leaving four aboard to complete the trip.

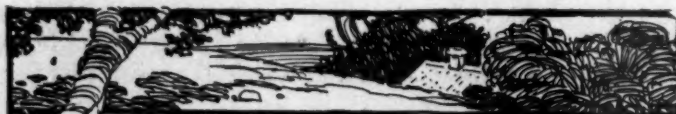
Crossing Kingsbridge the right and left turns were made to and through Van Cortland park to Yonkers. With throttle and pedal the passage was weaved through Yonkers into Warburton avenue. Up hill and down dale the regular route was followed, sweeping through Hastings, Dobbs' Ferry—Clinton's home—Irvington and Tarrytown to Ossining, where a stop was made for luncheon. This first stop was at 30.8 miles on the odometer, most of which had to be made at the 8 and 10-mile an hour rate provided for on the signs en route. The running time was 1 hour 4.7 minutes.

Starting again after 40 minutes for luncheon, hills were negotiated at 18 miles an hour and flats at anywhere from 35 to 42. Just south of Croton is a causeway on which a stop was made to let a heavy team pass out of range

on a hill that could be seen ahead. Beyond the bridge is a grade of 8 per cent average, then a long winding stretch of 1½ per cent and 2 per cent, and then a turn onto another grade

with yet another turn two-thirds the way to the top. This last grade is known locally as Welcher hill and is 15 per cent average. Half way up Welcher hill was made the only involuntary stop of the run. From this point to nearly the top the annual spring road mending was going on and as the last load of dirt had just been dumped, the car swung round a bend off the 1½ and 2 per cent middle sections, where it had picked up speed again from the first section climb, only to pile into this heaped-up earth, bringing it to a stop about half way through. An explanation of the performance the car was attempting was graciously received by the man with the shovel and he cleared something of a path through to more solid ground. The car was then allowed to run down backward by gravity, with the clutch out, of course, to the slighter intermediate grade, where a fresh start was had. This meant that a rush could not be made, there being no flat on which to gain a headway after letting in the clutch and with high speed the gear ratio. Accepting the situation, Keeler took the car to within two car lengths of the two-third point of the hill, when he had to declutch, as the clutch started slipping. The next two car lengths was a pretty exhibition of clever head and hand work. With right hand on the emergency lever and left on the throttle, Keeler would let in the clutch, drop his left hand to the clutch foot-pedal, pull the clutch in tight, shift his right to advance the spark a little, grab the steering with left and emergency again with right. Doing this over and over again with a rapidity greater than the telling and with clockwork precision, gains of 6 to 10 inches were made until the two-third point on the hill was reached. Here a side road was taken advantage of to back into for a fresh start up the angled and final part of the hill, which was successfully made without further declutching by the skilful Keeler.

North of Croton and in a long sandy up-grade of 12 per cent average was the first scare of the trip. Part way up the hill and going in the same





direction was a long wagon hauling logs and with a negro crew of six. The horn having no effect in warning the driver to get out of the center and over to the right, all four in the car put into use their shouting efforts, with Snutsel, the linguist of the party, doing it in seven languages, the effect being that every man-jack on the log wagon broke for the banks at the side of the hill. With this the horses turned to the left and, obviously, Keeler to the right. Here was a situation requiring cool judgment and definite skill. As the horses swung left the rear end of the logs moved to the right just as the car shot through the rapidly closing gap, the right-hand wheels on the car scraping the side bank and spurring the ditch gravel up the bank in appreciable volume. All took place in such a twinkling that hardly had the shouting ceased when laughter went up at the figure presented of these colored gem'men leaving the tall timber on the wagon and taking to the high banks of the roadside.

Then on to Peekskill, where a stop was made for gasoline, the odometer reading 41.9 miles, running time 3 hours. Leaving Peekskill a 2-mile, all told, extra run was made through mistaking the route at a fork right in the town. The proper route was picked up and followed to the second creek north of Peekskill. Knowing there was a long, twisting, double-decked grade ahead known as Annisville hill and bearing in mind the logging wagon escapade, it seemed safer to all that the hill be patrolled to prevent either rear-end or head-on collisions. And wise was the precaution, for around the first bend was found a herd of cows. With these out of the way and the course otherwise clear, a start was signalled and Keeler dropped in his clutch. Just as he was opening up for a good rush and on running onto the bridge, a team coming over the bridge deliberately bored him to the right, necessitating quick work at the wheel, a slowing down at the throttle and a tissue-paper space between the mud guards of the automobile and the bridge railing.

With the first rush cut out another



was started over the remaining flat, then up the first section of 12 per cent hill and the second section of 16 per cent, going over the brow with the speedometer registering 18 miles to the hour. This brought the car to the swing around Nelson's hill over that narrow and twisting cut-off, built as a result of the experiences on Nelson's hill during the New York-Rochester run of 1901. Just after turning into the north road east of Garrison's, a signal of distress was thrown out by the amateur driver of a cross between a runabout and a touring car stalled in the middle of the road. Ten minutes were spent with him on ignition troubles, when the clutch was once more let in on the high speed.

Up and down hill and around the hair-pin turn, where Graham came to grief last fall in the economy test, and then up and down more hills, the running was kept up through Nelsonville to Fishkill, with scenery and the rhythm of the regular running motor keeping tune to one another. It was in this section of the run that the fastest time was made in the entire trip. Three miles was the distance and the time was—well, in fairness to Mills, of the New York Oldsmobile agency, the time is not here stated, because he is syndicating that performance.

Wappinger Falls was next en route, with down the hill across the bridge and sharp turn to the right. Other

than a point near Ossining there is no meaner place in the New York-Albany route than that turn in Wappinger Falls. It is at the beginning

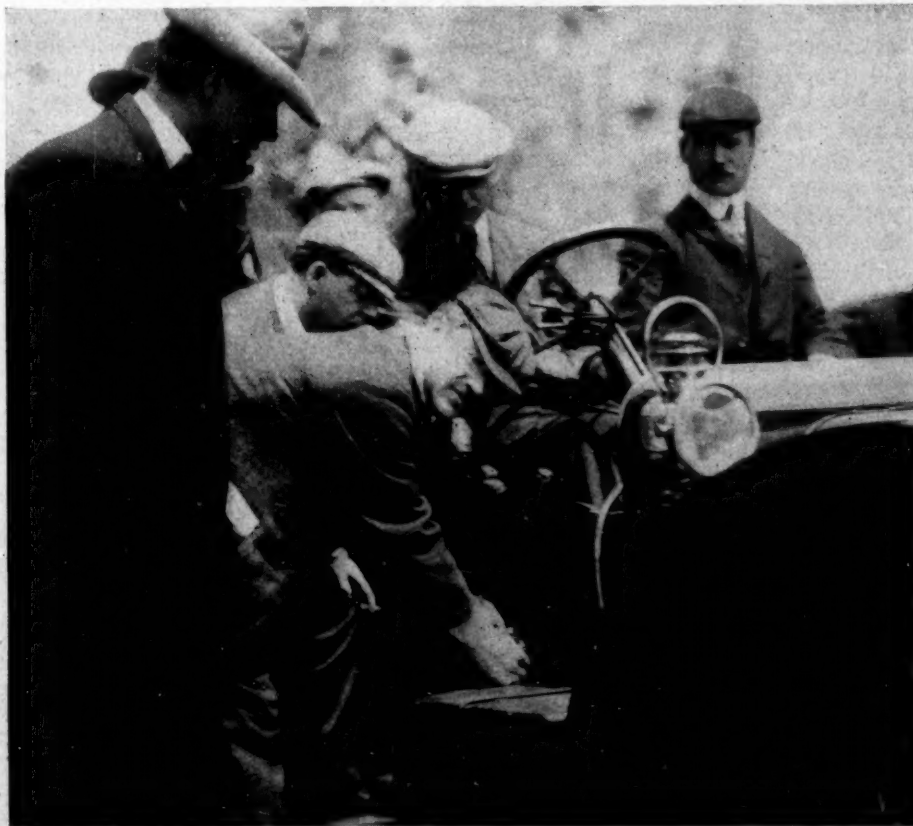
of a long, decently good grade with a trolley line in the center, fairly narrow as old-time eastern roads are, and the busy street of the town, with its teams and shoppers. Down to 5 miles an hour became necessary at the turn because of these conditions and a buggy driven on the wrong side of the street. Turning the corner slowly and declutching for that off-side play of the buggy made things look black until the throttle was opened, when faster, faster went the car until at the top of the hill the 12-mile-an-hour point was indexed on the speedometer. Soon was reached the new section of state road south of Poughkeepsie, when zip, and to the Nelson house of that town. Seventy-seven miles in 5 hours 10 minutes' running time. Then to the garage, and later Keeler to his pajamas—the only man prepared for a night away from home.

So throughout the run and until the next Sunday morning that gear lever stayed sealed into place, and every time the car was started it was done on high gear with Ferguson watching the lever and the seal. At 9:30 a. m. the seal was broken by the hotel proprietor in the presence of the two members of the technical committee of the New York Motor Club, together with many hotel guests and the usual curious ones on the street.

To one not familiar with the hill-after-hill route along the Hudson river bank and its bonnet-knocking-off-the-tail-lamp curves the performance of running on high gear all the way will fail to impress the mind with the real difficulty of the feat, to which must be added the fact that Keeler is a westerner, new to the east, and was never over the route before his successful accomplishment.

To the car the credit of having the power to perform; to Keeler the credit of driving marvelously fine under always unknown conditions before him. May his success in the Vanderbilt try-out and race be but a repetition is a sincere wish.

To Keeler and his pajamas!



ATTACHING THE SEAL WITH THE GEAR LEVER IN THE HIGH SPEED NOTCH



EDISON CHARGING BOARD, WITH SIXTY-BATTERY CAPACITY

IN A RECENT issue, Motor Age published a story, "Fifty Electrics in Edison Service," giving details of the equipment used by the Edison company of New York city in its local service. The following facts regarding the equipment of the company for charging, repairing and storing its vehicles are therefore of much interest. The company early in the experiments with automobile vehicles settled the question of maintenance by deciding that it would spare no pains or expense to see that the vehicles were always properly stored, washed, cared for and repaired. The Edison company went on the principle that a motor vehicle would not last any better than a horse, if it was not given the proper attention. Hence, there has always been a thorough inspection of all cars at regular intervals and if there is the slightest excuse for repairs or adjustments, these have been made.

The company's charging station occupies the square block fronting on First avenue and running from Forty-first street to Forty-second street and along the East river. Two buildings occupy this space, the newer of which was quite recently erected. They contain the repair shop, stock rooms, locker boxes and charging boards and here the machines are stored each night.

The repair shop is fully equipped with all the necessary tools and machinery and occupies a balcony built at the rear of the building for the purpose. Suspended from the front of this balcony is a crane which lifts machines, motors or sections of vehicles to be repaired, up to the balcony. Complete cars can be hoisted if necessary, as the crane is a very powerful one. Here the repairs are made, the car or part being lowered when put in shape. This obviates a great deal of confusion, as repairs are going forward in this mezzanine part of the building away from the

main body of the stored cars. The front portion of the plant, separated from the storage and repair rooms, is two stories in height. The upper floor contains the stock and locker rooms. In the former department, a man is constantly in attendance, day and night, to supply any hurry call for parts, accessories or supplies. Various parts of the machines are made on the premises. For instance, all armatures are wound in the building and in many cases, the cars are assembled after being shipped to the company in knocked-down form.

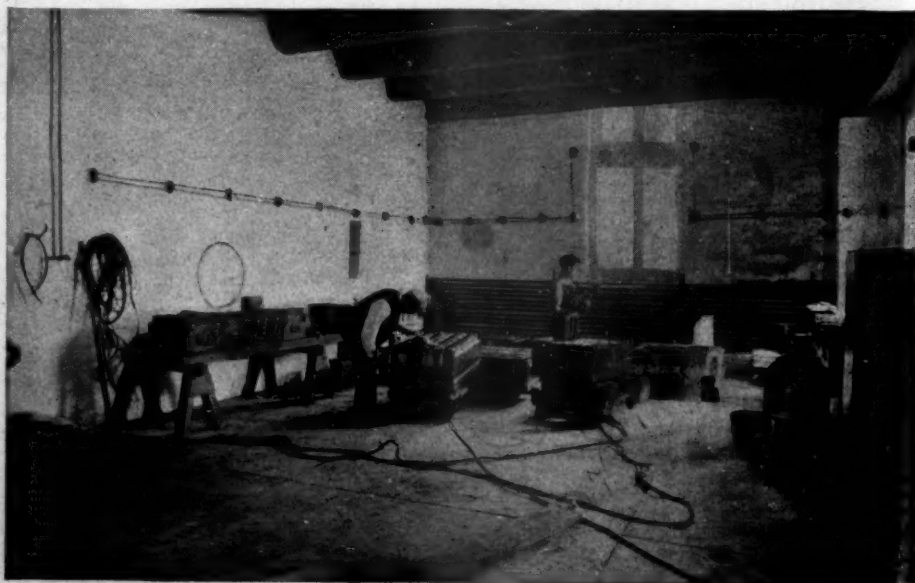
Divided into two sections the charging board occupies a prominent position on the main floor. Each section is 30 feet by 10 feet and contains thirty plugs. The board's equipment includes a line ammeter and a line voltmeter as well as a battery ammeter and a battery voltmeter. Directly under each switch is a rheostat for cutting in resistance while charging. Switches are distributed in various por-

tions of the building, making it possible to charge sixty batteries at one time.

Trucks are charged and overhauled each night. Most of the repairing of machines is also done after 6 o'clock in the evening. Once a year there is a general housecleaning, when all the vehicles, fixed machinery and electric equipment of the plant receives a thorough overhauling and renewals of parts are made whether they are needed or not. In addition, complete records of the condition of each vehicle is being kept and the superintendent can tell at any time just the conditions of each machine and the amount it has cost the company to run it up to any given date. The data for such history is secured by means of a very complete system of shop and nightly reports filed by the drivers.

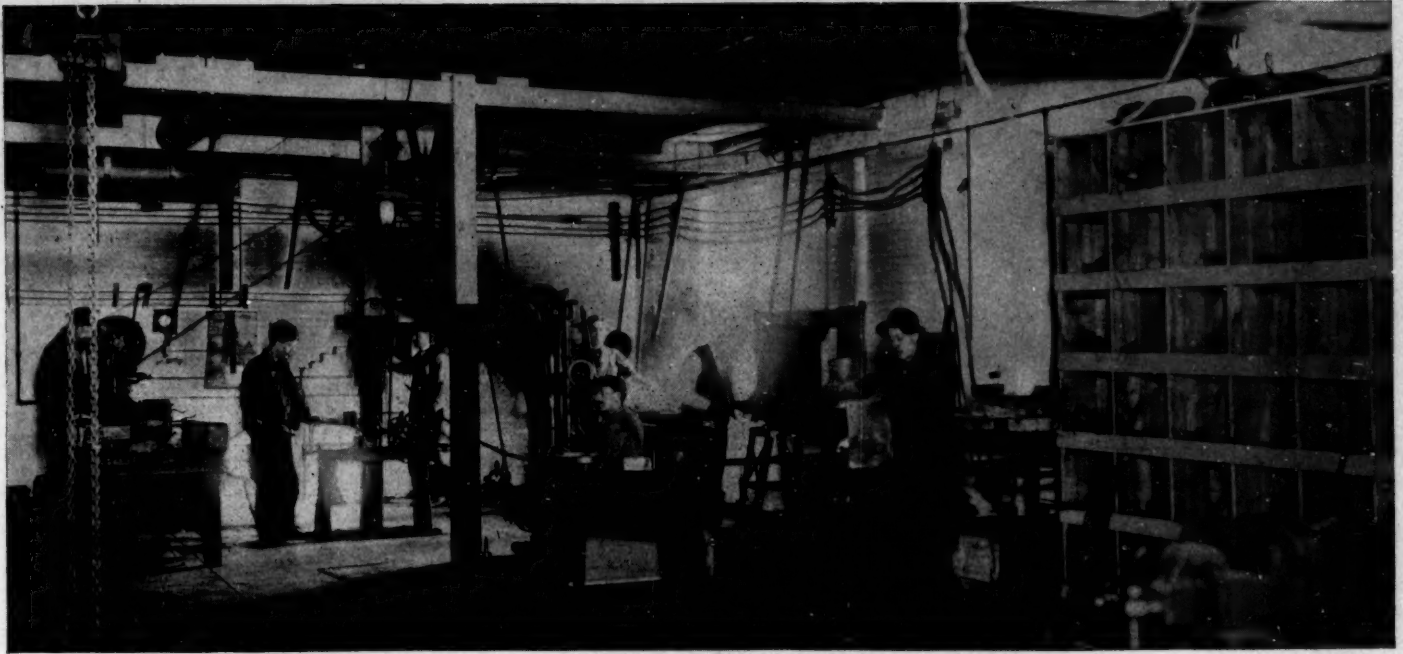
A night as well as a day force is employed, as the plant is kept open continuously. Including the night and battery forces, twenty-eight men are employed about the plant. This is exclusive of all drivers and helpers. Of extra parts, there are constantly on hand motors, bodies, armatures, valves, wheels, tires, etc. The stock on hand at present is valued at about \$15,000. Several thousand dollars of this is represented in wheels and tires.

An emergency wagon leaves the plant every evening and covers the entire route traversed by the cars of the company in



BATTERY ROOM IN THE STATION OF THE EDISON COMPANY





REPAIR SHOP AT THE EDISON COMPANY'S FORTY-FIRST STREET STATION

quest of blow-outs or any other damage needing immediate attention. Exide batteries are used in all the trucks.

Especial care is daily bestowed on keeping the repair and battery department in good condition. Dirt is a worker of evil in many cases and in no place is this truer than in a large electrical department. The stock lockers are examples of system—a place for each part, each part in its place and a system of recording all parts received as well as those given. Out of the several forges in the repair foundry, the lathes, grinding lathes, milling machines and in short everything is kept in first class condition and is always ready for an emergency. System is half the secret of success in the operation of fifty electric machines. Regular repairs, regular inspection, regular overhauling mean "A stitch in time," mean "An ounce of prevention is better than a pound of cure," and that

electric machines that might prove white elephants to their owners are vehicles of the greatest economy and reliability when given the care and attention they deserve. The man who discards his horses and goes in for the modern way of trucking can hardly expect to get results by simply running the cars into the garage at night and leaving them neglected until the next morning.



## MOTOR CAR BRIEFS

**To Use Tally-ho**—Arrangements are being made to run an automobile line from Chattanooga, Tenn., to Walden's Ridge during the summer. An automobile tally-ho will be put in commission.

**Hub Line**—The North Shore Auto Passenger Co. is another recent Boston incor-

poration, and will run a motor bus line. The capital stock of the company is \$50,000, and the directors are S. H. Dow, U. S. Haskell and W. S. Flint.

**Pittsburg Innovation**—The McJunkin-Straight Milk Co., of Pittsburg, Pa., has ordered a Four-wheel Drive truck, which will have a capacity of 7 tons and will be used for taking large loads of milk from the stations. This is the first machine of this kind in use in Pittsburg.

**French Enterprise**—The Darraeq and Serpollet firms have joined hands in the organization of a new company to construct industrial vehicles, omnibuses, lorries and trucks, steam and gasoline. The capital of the company is large for a first issue—\$2,400,000.

**For Resorters' Use**—The Lewis Point Land Co., of Syracuse, N. Y., has established an automobile bus service between Oneida and Lewis Point and between Canastota and the same place. Three buses will be put into service. The company is building a summer resort on Oneida lake.

**Knox Order**—The Knox Motor Truck Co., Springfield, Mass., shipped last week a carload of trucks to Los Angeles, Cal., these being the first shipment on an order of twelve which are to go there. The shipment included two 3-ton trucks and one 2-ton truck. The company is also shipping a watering-cart to the Metropolitan park commissioners of Boston for use on the state park reservations.

**Kansas All Right**—An automobile passenger and baggage transfer line will be in operation in Coffeyville, Kans., in about 2 weeks. Among those interested are Dr. Evans, who is the promoter of the enterprise; C. B. Gardiner, president, and Andrew Grief, mechanical engineer and superintendent. Five cars are already on hand, and three more will be purchased.



GENERAL VIEW OF THE EDISON COMPANY'S STATION

# From the Four Winds

**Highway Man Busy**—State Highway Commissioner Huston, of Ohio, has approved petitions for the improvement of the roads in Summit, Lake, Mahoning and Guernsey counties.

**Tri-Car Parade**—A parade of tri-cars is being organized to take place in Paris on Whitsunday and Monday. The distance will be 100 miles out from Paris and back. Women will be invited to take part, as it is intended as a public demonstration of the utility and practicability of the three-wheeler.

**Not a Motorphobist**—Once in a while a farmer is wise in the matter of automobiles. Near Syracuse, N. Y., of late automobilists have noticed a farmer with a fine young colt which he leads up to every machine that passes. He intends to have the animal so accustomed to automobiles that when he is ready to break it, it will not fear them any more than milk wagons.

**Cup for P. P. Pierce**—Philadelphia automobilists—tradesmen and laymen alike—have purchased a cup, which will be presented to Percy Pierce as an evidence of their appreciation of his energy in putting the American automobile to the front by entering the European endurance tests. The cup will be presented by Manager Wayne Davis, of the Keystone Automobile Co., of Philadelphia, who will sail from New York on May 31.

**Convincing**—O. D. Guilford, a motorist at Terre Haute, Ind., was recently arrested for the second time for scorching. Several witnesses swore he was going 15 miles an hour, but he escaped by proving his car would not go faster than 12 miles an hour. This reminds Chicagoans of a recent police court incident where the copper swore the accused had been going 35 miles an hour and the prisoner offered to give him \$25 if he would put it in writing and allow it to be used for advertising purposes, the maker never claiming anything like 35 miles for his car.

**Good for Erie County**—As a direct result of the trip to Albany, N. Y., of County Engineer Diehl and Supervisors Wilson, Mallon and Krehbiel, of Buffalo, New York State Engineer Van Alstyne has made a table for the distribution of money appropriated for good roads, under which Erie county will get over 32 miles of improved highways this year, as against 19 under the plan which the state engineer modified. The old scheme for distribution of aid was based solely on mileage of roads within each county; the new one is based more equitably on both mileage and assessed

valuation. The unfairness of the old plan was pointed out by Erie county's representatives to such good effect that the method was changed.

**Shock Absorber Test**—A shock absorber contest is now being organized by the Paris Chauffeurs' League. The cars competing will be given a set of special buckets filled with water, and the course will be over 16 miles of the most formidable pavé in the outskirts of Paris. A maximum time will be given to cover the distance, and those arriving with the most water in their buckets will be awarded the prize.

**Run to Decatur**—The Bloomington Automobile Club's run to Decatur, Ill., was participated in by six cars, the machines taking part in the automobile section of the Elks' parade at Decatur. All the cars were back in Bloomington by 8 o'clock in the evening, having completed the 96 miles without trouble of any kind. The club is contemplating other runs during the summer to Peoria, Chicago and other points. Parties touring between Bloomington and Decatur will find the road over the Salt creek hills south of Clinton in much better condition than last year, as the dirt dumped by the interurban in the road has settled and graveled.

**Cape Town Catches On**—Automobiles are now generally in use in Cape Town, South Africa. Their popularity is enhanced because the people are unusually devoted to suburban life, and the motor car of moderate power and comfortable seating capacity is increasing in demand. The suburbs of Cape Town extend 5 to 10 miles on both sides, and are connected by good roads. When times become somewhat better there will be a very general demand for automobiles and the makers first in the field with good, sound cars at prices ranging from \$1,000 to \$2,000 should do well. There is an occasional demand for the more costly higher-powered cars. A list of the thirteen cars used in the recent 100-mile reliability trial arranged by the Automobile Club of South Africa will best indicate the market for similar types of American cars. There were six Panhards, two of 10-horsepower, one of 8 and three of 7; one each 12-horsepower Gladiator, 14-horsepower New Orleans, 22-horsepower Daimler, 10-horse-



SIGN BOARDING AROUND TACOMA

power Lancaster, 10-horsepower Peugeot, 9-horsepower Star, and 6-horsepower de Dion. The governor of Cape Colony owns a White steamer. Oldsmobiles and Pope-Toledo cars are well and favorably known, but effective agencies or salesmen are required.

**Gaillon Hill-Climb Date**—This year the Gaillon hill-climb will take place in France October 28. This is the oldest of European automobile events, the first one having been held in 1900.

**Length of Sarthe Course**—Surveyors have measured the Sarthe course which will be used for the French grand prix and report it to be 64½ miles in length. As it must be covered twelve times in the race, this will make the total distance 774 miles, or equal to the distance separating Paris and Berlin.

**Starts Good Work**—W. W. Pickerrill, president of the Tacoma Automobile Club, had the honor of nailing up the first automobile danger signal on the North Pacific coast. The sign is at an S-formed hill on the prairie road, and is considered very dangerous. The club has had painted a number of road signs, and has authorized the officers to hire a man to place them at designated points. The membership of the club is now sixty-four, which is about double the number of automobile owners at the close of last year.

**Rochester Says Race**—The Rochester Automobile Club, of Rochester, N. Y., has voted to hold the proposed race. It will take place in September, probably Labor day, and will be at a distance of 100 miles. A 25-mile course will be selected. It will be open only to stock touring cars and an entry fee of \$250 will be charged. An offer of a \$1,000 cup from a Syracuse man was declined because the Rochester club thought some local enthusiast ought to come to the front.

**Flower Parade for Pittsburg**—The Automobile Club of Pittsburg is planning a mammoth flower parade which will be one of the most beautiful and spectacular shows ever seen in Pittsburg. It will be held some time within the next month but not till after the orphans' day parade, which is scheduled for June 5. It is intended to have the flower parade when the roses are in full bloom. Prizes will be awarded for the best decorated of the cars. The local automobile club and the Pittsburg Country Club have each offered



a \$100 silver cup to prize winners. Many jewelry and art firms have signified their willingness to contribute liberally.

**To Improve Boulevards**—The West Chicago park commissioners have decided to spend nearly \$1,000,000 in the rehabilitation of the west side boulevard system of Chicago. The roads are all sadly in need of repair, so the commissioners will fix up Jackson, Washington, Ashland and Twelfth street boulevards, resurfacing some of them.

**Village Coppers on the Alert**—Inasmuch as drivers of automobiles have failed to observe the recent action of the council of Perrysburg, O., with reference to fast driving of automobiles over the streets of that town and the roads leading therefrom, the council has decided to enforce the law, which provides for a speed limit of 8 miles in town and 15 miles over country roads.

**Wise Paymaster**—J. M. Steenberg, of Toledo, O., division freight agent for the Pennsylvania railroad, is a strong admirer of the automobile, preferring driving his machine to riding on trains on his own road. Recently he left Toledo in his automobile to pay the men along the line instead of going by rail in a special car, as other paymasters usually do. He drove to Coshocton, a distance of 150 miles, leaving

Toledo at noon and reaching Coshocton in the evening in time for dinner. The next day he drove from Coshocton to Columbus, a distance of 68 miles.

**An Automobile King**—On the occasion of the Spanish king's marriage, one of the most brilliant functions undoubtedly will be the automobile fete. All the members of the Barcelona Automobile Club will go to Madrid in their cars and the members of the Royal Spanish Automobile Club will meet them outside Madrid.

**Keeping Abreast of the Times**—George T. Barnsley, of the department of county roads in Allegheny county, Pa., has made a requisition for an automobile to help him get over the country quickly. The police department of the city of Pittsburg and the Allegheny county commissioners are about to place an order for a big car to be used at the county morgue and perhaps another at the central police station.

**Aero Club in Philadelphia**—As a result of the enthusiasm created by the recent balloon ascensions, the Aero Club of Philadelphia was formed at the Racquet Club last Thursday. There were twenty enthusiasts present, and a committee on organization was named, consisting of Alfred N. Chandler, chairman; E. A. Custer, secretary; Henry S. Gratz, Dr. P. B. Thatcher, Dr. P. Chalmers Fulton, Dr. S.

J. Ottinger and Harold D. Moses. A meeting was called for the present week, when a permanent organization will be effected. It is the intention of the new club to promote races.

**Clean Bill of Health**—One of the best evidences that the Indiana automobile driver is careful is shown in a report issued by Dr. J. N. Hurty, secretary of the Indiana board of health. The report shows that no one was killed in the state by an automobile during the month of April. It may also be well to say that there was not a serious automobile accident during the same month. Railroads killed seventeen people, the trolley cars claimed two victims, while the horse was the cause of three deaths.

**Sturdy Car**—E. J. Gulick, general manager of the Simplex Motor Car Co., recently drove an American-Simplex from the factory at Mishawaka, Ind., to Chicago, a distance of 132 miles, in 7 hours 10 minutes on 7½ gallons of gasoline and less than a pint of oil. The roads around Michigan City were almost hub-deep in sand, but the car came through. Gulick never dropped lower than his second gear at any stage of the journey. The machine is a two-cycle two-cylinder 40-horsepower car and has been driven 14,000 miles without any mechanical trouble.



## STORIES A LITTLE OUT OF THE ORDINARY



### CAR WAS FRACTIOUS

Upon certain occasions when a man is not properly schooled in automobile driving, the machines behave in a way that would lead one to believe that they are trying to get even. Saturday in Syracuse, N. Y., "Pen" Prime, a senior in the Syracuse University law college, invited a pretty girl to go riding with him in an automobile. He had had a little experience in running a machine and thought he was a veteran. Going to Richard Kolbe's garage, he rented a runabout and took the girl to Cicero. There they had a nice dinner and after spending a pleasant hour or two Prime went to get the car. The runabout was stored in the hotel barn and Prime got in and pulled the lever. Running around to the hotel steps where the girl was anxiously awaiting the return trip, he was horrified to find he could not stop the machine. With tears in her eyes the girl asked him why he didn't take her in, but Prime kept going and the girl was left behind. He shouted back he couldn't stop the automobile, but would try to get her back to the city some way. Prime was having a hard time of it, his mental distress being something pitiful. Going about 10 miles an hour in a perfectly steady manner he was having a nice ride, but he didn't know

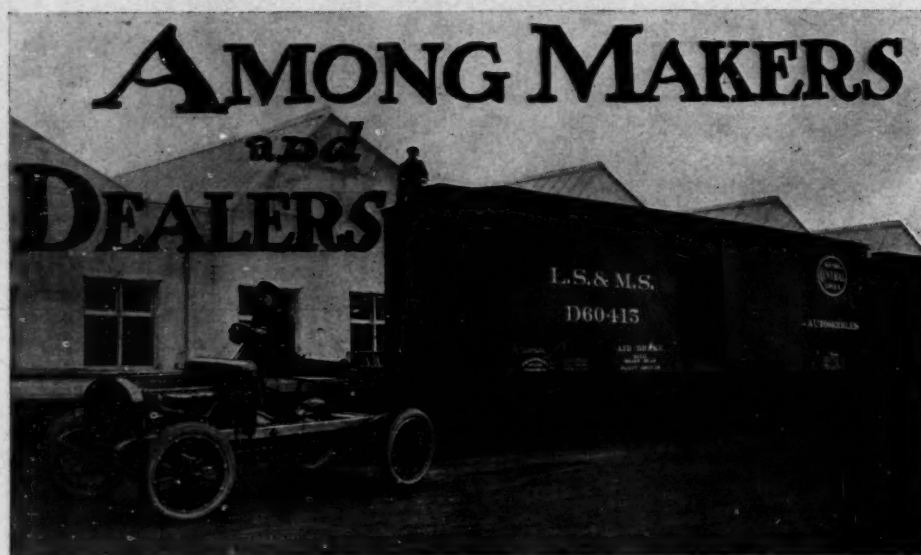
how he was going to stop. He hoped he would run out of gasoline, but he didn't. His frantic efforts to stop only increased the speed and when he reached the city he was going about 20 miles an hour. Policemen shouted to him to stop and he would gladly have obeyed. Under the impression that the machine might stop if steered into its own garage, and as it had slowed down somewhat, Prime ran it into the agency. Kolbe, when he saw that Prime did not stop the machine, yelled just as the runabout butted into the wall. At last it had stopped. Another automobile was sent out for the young woman.

### JUST A YANKEE'S WAY

Some American dealers would not mind it if a few of their customers would treat them the way a wealthy Yankee has M. Fournier, a Paris agent. Three years ago he sold an automobile to the American, and received a gold pencil-case as souvenir; last year, on making a second sale, he received a gold time-keeping watch; while this year, on selling a third machine, the Yankee has sent him a four-cylinder American-made automobile for his own use. M. Fournier is wondering what he will get in the way of a souvenir next year if this customer goes in for another model. He suggests a chateau.

### AS THEY DO IT IN FRANCE

Frank P. Illsley, one of the Chicago dealers, has received an interesting letter from one of his customers, R. B. McCoy, who is now touring in Europe. Mr. McCoy writes: "A 24-horsepower car in France doesn't cut much figure, nor do the 40 horsepowers. From 60 to 120 seem to be the most popular. They run from Nice to Paris, nearly 700 miles, through towns and over mountains, in 17 hours. I passed Thery's 1904 racer yesterday. It already looks like a toy in comparison with this year's cars. The examination for a driver's license over here is pretty stiff, and a novice would surely fail to make good. The prefect of police sits on the front seat and directs where to go and how fast. He will shoot you into a pocket on a crowded street and run you up and down narrow winding roads, over 12 to 28 per cent grades. If he thinks you will do, he issues a license—no charge—but if he doesn't there is no appeal. The license contains your photograph, a duplicate of which is kept on file. The license is for life and is good throughout Europe. The penalty for driving without one is 30 days in jail. Fines don't go. In case of an accident over here, the police decide on the spot who is to blame and the guilty party is locked up by the authorities."



RAMBLER CAR USED AS SWITCH ENGINE AT THE JEFFERY FACTORY

**Gets Factory Man**—H. N. Dubar has gone from the Aerocar company factory at Detroit to act as traveling representative of Perry Owen, the eastern sales manager.

**Graves Superintendent**—B. L. Graves has been appointed superintendent of the Amos Pierce Automobile Co. Mr. Graves for 2 years did expert work for the Oldsmobile company and for the past 3 years has been a salesman at the Amos Pierce garage in Syracuse, N. Y.

**Locomobile's Quaker Garage**—The Locomobile Co. of America is about to build a three-story garage and repair shop, 36.4 by 120 feet, at 249-251 North Broad street, Philadelphia. Horace Trumbauer is the architect, and four prominent building firms of the Quaker city have submitted estimates, which will be opened May 31.

**Want Maxwells On Coast**—The faith shown by Californians in the speedy rebuilding of San Francisco was forcibly indicated recently by the receipt of two orders by the Maxwell-Briscoe Motor Car Co., of Tarrytown, N. Y. The first was from the San Francisco agents, who wired that they were in need of 100 cars as quickly as they could possibly be obtained, and wished immediate telegraph advices as to how many could be shipped in order that they could send a check for deposit.

**Works On New Electric**—Charles R. Bowman, president of the Cooney Co., of Toledo, O., states that the company will not have its first vehicle completed for at least 1 month or 6 weeks. The Cooney company is the consolidation of the Cooney Carriage Co., formerly engaged in the manufacture of horse-drawn vehicles, and the Antler Garage & Stables Co. The machinery has been removed to the former location of the Antler concern. James J. Cooney is vice-president of the company and Preston C. West is manager. While the company will continue to make a few horse-drawn vehicles, it is the intention to drop that line altogether as quickly as possible, and give the entire attention of

the plant to the manufacture of electric vehicles. The plant is located on Twenty-second street.

**French Brains as Auxiliary**—The E. R. Thomas Motor Co. has established in France an engineering department which will work in harmony with the Thomas staff in Buffalo.

**To the Four Winds**—In one day three shipments of model 15 Ramblers were made to Springfield, Ill.; Boston, Mass., and Los Angeles, Cal.; two to Hartford, Conn., and one each to Aberdeen, S. D.; Poughkeepsie, N. Y.; Omaha, Neb., and Grand Rapids, Mich.

**Needs More Room**—After vainly endeavoring to so alter the present salesrooms at 242 North Broad street as to make it meet the requirements of the rapidly-growing business, Manager W. F. Smith, of the Philadelphia Rambler branch, has given up the attempt, and in the near future will remove to considerably larger quarters on the opposite side of Broad street, above Race. Alterations to the future home of the Rambler are now in progress, and a house-warming will be held about June 15.

**Mexican Outlook**—John Kerwin, representing the H. H. Franklin Mfg. Co., of Syracuse, N. Y., maker of the Franklin car, has just returned from an extended trip through Mexico, which took him, among other points, to Merida, Yucatan, and Mexico City. At the former point he found the automobile business in a thriving condition. The city has a population of about 100,000, the streets are well-paved, and American machines predominate. Although the roads about Merida are almost impassable, an appropriation has been made for a macadam highway to connect Merida and Progreso, the port of entry. This will greatly stimulate the sale of automobiles in that territory. Mexico City has a large number of automobiles with a scattering of machines imported from across the water. The high altitude of

this city has a peculiar effect on all cars, resulting in some cases in a loss of power of 20 per cent.

**Branch in Chicago**—Owing to increased business the Warner Instrument Co., of Beloit, Wis., has opened a branch office in Chicago at 1251 Michigan avenue under the management of A. J. Inderriedan.

**Big White Investment**—After leasing its present Philadelphia quarters at 629-633 North Broad street, for a year, the White Sewing Machine Co. has bought the property outright for \$75,000 and will spend at least \$15,000 more in making it one of the finest establishments on the row.

**New White Garage**—The White Sewing Machine Co. is having plans prepared for a new garage in Cleveland. A tract of land 53 feet on Rockwell street between East Sixth street and East Ninth street and one block east of the present garage has been secured. The lot is 165 feet deep and the entire property will be covered by the building.

**Reo Gives Up a Branch**—The Reo Motor Car Co. has given up its branch house in the Mint arcade, Philadelphia, and will hereafter be represented in Philadelphia through an agency in charge of Allen & Greenwood, who will continue in the same quarters. Former Manager Daniel Cohen goes to New York, where he will assume the management of the Reo retail sales department.

**Frisco Prospects**—The H. H. Franklin Mfg. Co. has received encouraging news from G. A. Boyer, its dealer in San Francisco, who states that many automobiles will be needed during the reconstruction period, and as evidence has placed orders for two carloads of Franklins to leave Syracuse at once. Mr. Boyer was completely burned out during the recent fire but has established temporary quarters at Oakland, from which point he is taking care of his Franklin trade. Express shipments of repair parts have already been rushed to the coast and two carloads of automobiles are being sent across the continent with all dispatch.

**Toledo's New Enterprise**—The De Luxe Motor Car Co., which was recently incorporated under the laws of New Jersey and which has taken a lease of the old Yale plant, at Toledo, O., is planning to erect a large plant on the east side of the Maumee river, above the city, the company now having an option on three farms on which the plant is to be located. The company is capitalized at \$750,000. It is planned to build 250 cars next season. The company intends to also enter the commercial field, building a full line of delivery wagons and trucks; but nothing but pleasure vehicles will be manufactured during the coming season. The officers of the company are as follows: President, George M. Verity; vice-president and secretary, F. M. Keeton, of Toledo, O.; treasurer, R. C. Phillips; assistant treasurer, F. A. Shepler; superintendent, John E. Lo-



cher; mechanical engineers, Frank S. Davis and John A. Herzog; assistant engineers, W. F. Meeks and Charles Guentert.

**Lives Up to Guaranty**—The Napier people announce they are turning out fifteen cars a week from their English factory, and that they have yet to pay the first forfeit of \$100 a week for a late delivery.

**Sells Second-Hand Cars**—The Syracuse automobile exchange has organized with offices at 322 South Salina street, Syracuse, N. Y., for the sale of second-hand automobiles and automobile supplies. The exchange publishes a list of the cars which reaches a large number of people.

**Meiselbach Organizes**—A. D. Meiselbach has formed his company to manufacture motor trucks, the new company being capitalized at \$200,000, with Mr. Meiselbach as president, Byron R. Godfrey as vice-president and Charles Rohde as secretary. The company has secured 10½ acres of land at North Milwaukee, Wis., on which is located a new building 100 by 140 feet. The company intends to manufacture a 3,000-pound friction-drive wagon, geared to do 15 miles an hour.

**Rambler as Switching Engine**—Up at the Rambler plant in Kenosha, Wis., is a bright foreman of a loading gang who hit upon a good idea the other day. He had been bothered a lot through the slowness of the railroad company in providing a switch engine to move the freight cars when they are loaded. One day he saw the Ramblers being tested on the try-out track and impressed a model 15 into service to act as a switch engine. The automobile easily did its stunt and is now a fixed institution. Whenever that foreman needs a switch engine he signals one of the Ramblers on the track, hitches a rope to its rear axle and hauls the freight cars around without waiting for a switch engine to help him.

**Rapid Work**—No time is being lost building the new Pierce factory in Buffalo, as the contract calls for its completion in 60 days. The work on it started on a Monday morning and by Friday of the same week the skeleton of the main building, 400 by 205 feet, was standing. The foundation holes for the pillars of others were dug and were being filled with cement. All the buildings are to be of reinforced concrete. Lumber is used simply for scaffolding in the erection of the concrete pillars; the buildings when finished will be entirely steel and iron. The plant faces on Elmwood avenue, with the tracks of the New York Central in the rear of it, convenient to the shipping department. The main factory and the assembly building will be of one-story, but there will be a couple of two-story buildings 60 by 325 feet occupied by the body-building department. Other buildings will be occupied by the brazing and blacksmithing shop, a garage and general offices. In all, the plant will have a front-

age of 600 feet on Elmwood avenue and 1,000 feet on the railroad tracks at the rear of the new structure.

**Gets the Windsor**—The North Philadelphia Auto Station, which does a large repair and storage business in the upper section of the Quaker city, has taken the local agency for the Windsor car, made in Evansville, Ind.

**Franklin Works On 1907**—The H. H. Franklin Mfg. Co. is starting work on its 1907 models and expects to have a large number ready for fall delivery. About sixty cars a week are being shipped at the factory now. It is claimed 1,200 cars have been disposed of this season, with 6 weeks ahead for shipments.

**Has Wayne and Logan**—With the Logan commercial gasolines and the Blakeslee electrics as the foundation for a complete line, President W. N. Knox, of the Knox Commercial Auto Co., of Philadelphia, has just succeeded in securing the local rights for the Wayne, and a force of carpenters is now at work enlarging and refitting the salesrooms at 202 North Broad street to provide the necessary accommodations.

**New Whitney Plant**—The Whitney Mfg. Co., of Hartford, Conn., is about to start work on the construction of a new factory building on a piece of property located on the New York, New Haven & Hudson River railway tracks and directly south of the Hartford Rubber Works Co., and the Pope Tube mill, having a frontage of about 450 feet on Hamilton street and 560 feet on Bartholomew avenue. The total area is 8 acres. The building will be of reinforced concrete, with the main factory 228 feet long by 61 feet wide, four stories high, with a single story extension building about 64 feet square. This will give a

floor space of about 62,000 square feet. The company expects to take possession about November 1.

**Thomas in Louisville**—The E. R. Thomas Motor Co. has appointed the Zorn-Strauss Co. as its agent in Louisville, Ky. The new appointee, however, will not take hold of the line until next year.

**Cuts Into Chicago**—The Walden W. Shaw Automobile Co., of Chicago, is now located at 1532 Michigan avenue, where the Berliet, made by the American Locomotive Automobile Co., is being handled. The Shaw company is one of the new concerns on the row.

**Will Import Itala**—The Itala Import Co., of New York, has been formed to import the Itala cars made in Turin, Italy. E. Lillee, the former American agent for the Mors, is president and general manager of the new company, which will occupy the former Mors garage at 41 West Fifty-fifth street as headquarters.

**Death of William Herrick**—Chicago lost one of its most prominent retailers last Friday, when death claimed William Herrick, head of the William Herrick Co., which represents the Peerless in the Windy city. Mr. Herrick was stricken with an apoplectic stroke a week ago Tuesday and never recovered consciousness, dying at St. Luke's hospital last Friday morning. The business will be conducted without change, W. D. Foreman having been appointed manager, while W. C. Thorne will act as temporary treasurer. Mr. Herrick, in the bicycle days, was manager of the Morgan & Wright plant and at the same time looked after the racing interests of the firm. He entered the automobile business a couple of seasons back when he took over the business established by Dan Canary.



CHICAGO AGENCY OF THE BERLIET CAR

# MOTOR LUBRICATION AND LUBRICANTS



Paper Read by J. W. G. Booker,  
A. I. C., Before Auto-Cycle  
Club of England—All Phases of  
an Important Question Treated.



Lubrication is the art of making things work smoothly. Lubricants minimize the friction existing between two surfaces when one slides or rolls over the other; but they set up friction themselves, engines having to overcome two classes of friction—the friction arising from the metal surfaces sliding over one another, and the internal friction of the lubricant. The first we call solid friction, the second fluid friction; and it is the aim of all engineers to reduce the first to nil, and the second to a minimum. The nearest approach to this ideal is obtained by the use of an oil bath containing a fairly fluid lubricant and with, of course, accurately made bearings. The ideal condition is one where the sliding surfaces are completely separated by a film of lubricant.

First, as to solid friction. Increasing the pressure increases the friction; increasing the comparative roughness of the surfaces increases the friction. Distribution of the load over a large area of bearing does not decrease the total friction, but it lessens risk of abrasion and seizure. Friction is greater between soft than hard metals, and is greatest at the beginning of motion. In practice it is better to let a hard work against a soft metal, making provision for the easy renewal or repair of the latter as it wears. As to fluid friction. It is independent of the pressure, it is directly proportional to the area, varies approximately as the square of the velocity, and is influenced by the viscosity. Between the solid sliding surfaces the fluid may be regarded as consisting of a series of superimposed layers, each moving at a speed proportional to its distance from the fixed solid surface. The topmost plane of fluid is carried along by and moves at the same speed as the moving solid surface, the lowest plane remains stationary, and the intermediate move little or much, according to their distances from the solid surfaces. The thickness of these several planes of lubricant are dependent on the weight carried and the lubricant used. With heavy loads the lubricant film is divided.

Viscosity is the property by virtue of which the lubricant forms a comparatively thick film between rubbing surfaces—I say thick, but in reality these films are measured in thousandths of inches. The more viscous the lubricant the greater is the pressure which can be sustained, but, at the same time, unnecessarily high viscosity creates unnecessary fluid friction, and the viscosity of the lubricant should, therefore, be in proportion to the pressure which it will have to sustain. The follow-

ing table shows the wide variation of pressure in bearings:

	Lb. per sq. inch
Light and fast running cotton spindle .....	2 to 5
Light shafting .....	80 to 100
Heavy shafting .....	300 to 600
Marine engine crank pins.....	800 to 1,100

It is of interest to compare these figures with those for a ball bearing, in which it is customary to consider the whole of the load to be carried by one ball. With an average 5-16 inch to 3/8-inch ball, the working pressure may vary from 500 pounds to 1,500 pounds between the points of contact.

In rolling friction the balls or rollers act in a manner closely analogous to the lubricating medium of a plain bearing by keeping the working faces apart. If it were possible to make a ball or roller bearing with absolutely no sliding friction, that is, entirely rolling friction, the use of a lubricant would be unnecessary. However, there is always a little sliding between the balls or rollers themselves or between them and the cage employed to keep them in position, and it is to minimize this that a lubricant is necessary.

One of the functions of a lubricant is to overcome or neutralize accidental variations of the smoothness of surfaces. Although almost infinitesimal in magnitude, they cause variations in the friction, which are always tending to produce overheating, and it is solely a matter of chance when these tendencies preponderate over the lubricating effect of the oil. A light oil lubricates as well as a viscous one when all is smooth, but when a minute irregularity occurs, such as grit or rough places on the surfaces, heat is generated locally, the oil becomes too thin, and there is a risk of seizure taking place. By the use of a plentiful supply of a viscous lubricant this risk can be considerably reduced. A new engine under-lubricated will seize much more readily than one well run in. There are three other conditions to meet which a viscous lubricant is necessary, namely, great pressure, slow speed, and high temperature. Seizing can always be traced to a failure of the lubricant to keep two metal surfaces adequately separated by a film of oil. Either the oil may be too thin, or the pressure between the surfaces too great, or there may be no lubricant there at all. When the two surfaces come into close contact under considerable pressure much work has to be done to get one to slide over the other; the work expended in overcoming the friction is translated into heat, and the heat thus produced raises the temperature of the bearing, and the molecules of metal at the two sur-

faces, spurred into great activity, diffuse from the shaft into the brasses, and from the piston into the cylinder wall and vice versa. This tendency to diffuse or weld is so great that, when two metals with carefully cleaned and polished surfaces are very strongly pressed together and left for several weeks at the atmospheric temperature, molecules from one are found diffused throughout the other. This migration is immensely facilitated by a rise in temperature equivalent to an increase in the velocity of the molecules. Under suitable conditions the interlocking may be so great that it is impossible to separate the surfaces intact again. When the seizing is incomplete, and the metals continue to slide over one another, the surfaces, especially of the softer of the two, are scored, and, even if checked at this stage by stopping the engine or by a copious supply of oil, the repair of the damage is an expensive matter.

The following experiment shows in a striking manner the difference between a thick and a thin oil. A plug and ring are taken and thoroughly cleaned free from oil and grease, when it will be found that the plug, which should be a close fit in the hole, will not go in without a tap from a mallet. On greasing the plug with a little thin oil it slips in readily, and can be easily revolved in the hole several times; but in a few seconds, owing to the lubricant's being squeezed from between the surfaces by the pressure, the plug seizes and has to be knocked out. The plug and ring are again well cleaned, and this time greased with thick oil. The plug will slip in just as easily as before, but it will be more difficult to revolve owing to the greater fluid friction of the lubricant.

## MANUFACTURE OF LUBRICANTS

By far the most important lubricant is mineral oil obtained from petroleum. At the present day the bulk of the best lubricating oils are manufactured from American petroleum. There are several methods in use. In the first place there is ordinary distillation. The petroleum is run into a still and heated, water and low boiling point liquids are driven off, the heat is increased and the heavier fractions obtained, till finally, after considerable and prolonged heating, the still contains only a semi-solid pitch or coke-like mass. The heavier distillates are purified in the usual manner with acid and alkali, and a pale yellow or amber-yellow oil results, which is useless for cylinder lubrication, except in well-cooled stationary gas engines. The defects of this process, which



has been almost entirely discarded, are the great heat of the still causing partial decomposition or 'cracking' of the heavier distillates, and the aid of chemicals, which, even by the use of large quantities of water, it is extremely difficult completely to remove from a heavy oil. The second and more generally followed method is this: After the first fraction of water and light oil has been driven off, small quantities of superheated steam are blown through, and at the same time a partial vacuum is produced in the still, both of which assist the vapors to distil off with the minimum of decomposition; the effect is such that an oil boiling at, say, 250 degrees Centigrade, in the ordinary still comes over at less than 200 degrees Centigrade in the vacuum still, and at a greater speed. During the course of the vacuum distillation several fractions are collected. The first are comparatively light-bodied and have medium boiling points; the last are very viscous, and distil over with some difficulty. The residue in the still when a good petroleum stock is used is of a vaseline consistency, and is filtered warm through animal charcoal or bone black, whereby the finest and most expensive cylinder lubricant is produced.

#### ADULTERANTS

The variety of substances added to a lubricant for one purpose or another is very great. Each has its use—some improve, others do the reverse. A material variously known as 'thickener,' 'viscom,' intended to be added to a thin oil to increase its viscosity is common. It consists of cotton seed or other vegetable oil saponified with alkali and the resulting soap precipitated by alum; the oleate and stearate is washed with water, dried and thoroughly incorporated with three or four times its weight of mineral oil. Ordinary soap is also sometimes added to a lubricant; it imparts body and gives a fine sparkling appearance, but it is quite unfit—indeed harmful—for cylinder lubrication. Water, although not exactly an adulterant, is often found in a badly-prepared lubricant; it causes great trouble, especially in cylinders, and particularly if vegetable oils are also present. Another adulterant added to improve the viscosity of a poor oil is India rubber; it is said to prevent the tendency of an oil to gum on the bearings; imagine its effect if it gets into the combustion chamber by mistake. The point, however, of greatest interest is whether to countenance the addition to the mineral oil of vegetable oils, such as cotton seed, rape seed, or olive oil; or of animal fats, such as lard, tallow, neatsfoot oil, or sperm oil. In their favor it may be said that they have a very low setting or solidifying point, and when heated thin much less rapidly than do mineral oils of a similar viscosity. Further, they are more resistant to high pressures, hence their use under certain conditions for heavy steam and gas en-

gines. In fact, for gas engine purposes the admixture of 5 to 10 per cent of vegetable oil with the mineral oil is distinctly beneficial.

The following are a few arguments against the use of vegetable oils, even in small quantities. They all develop acidity, particularly at high temperatures, which has a corrosive action on metals. They nearly all absorb oxygen from the atmosphere, and thicken or gum on the bearings. At a high temperature, such as might be met with in an air-cooled cylinder, the fatty matter would be burnt into a tarry deposit, whilst a mineral oil at the same temperature would be merely volatilized and swept out of the cylinder with the exhaust gases.

#### GREASES

The usual constituents of greases are mineral oil, tallow, vaseline and soap. In several cases a lime or aluminium soap is used instead of a soda soap, and in special cases tale and graphite are added in small quantities. Other materials, such as chalk, starch, china clay, whiting, sulphur, resin and water, are sometimes present; they serve no useful purpose, unless it be to increase the makers' profit. The use of greases is overdone; many bearings and gear-boxes would be much better lubricated by a thinner material somewhat in the nature of thin vaseline or thick oil. It is not as if there were great pressures requiring great resistance on the part of the lubricant; a thinner material would serve equally as well. And there is another advantage in a thin grease: in the event of a nut or bolt or other foreign matter falling into the box, it immediately sinks to the bottom, whereas with the thick grease it is liable to be picked up and carried into the teeth.

#### TESTING METHODS

The following are the chief properties which a lubricant should possess to be efficient: Enough body or viscosity to keep it between the rubbing surfaces at their maximum temperature and pressure. The greatest fluidity consistent with the required viscosity. Good capacity for transmitting heat. It is one of the uses of a lubricant to transmit or carry off the heat generated by friction; the larger the supply of lubricant the better is this effected, which is another argument in favor of an oil-bath. No tendency to change in the air. Free from mineral or fatty acids likely to corrode the surface of the metal. High temperature of vaporization and of decomposition and low-freezing or "setting" point.

#### EFFECT OF HEAT

The first effect of heat on a lubricant is to considerably reduce its viscosity. The temperature of the cylinder wall in an air-cooled engine averages from 250 degrees to 300 degrees Fahrenheit, and in a water-cooled engine from 180 degrees to 250 degrees Fahrenheit. At the higher of

these temperatures the lubricant is about as thin as water or paraffin, and splashes just as readily. The following table shows, roughly, the change of viscosity with the rise of temperature:

	Degrees						
	75	110	150	250	300	350	400
Temperature	Fah.	Fah.	Fah.	Fah.	Fah.	Fah.	Fah.
Time of efflux							
in seconds	740	110	54	39	32	25	21

If there be an adequate supply, even in this last state, it is capable of preserving a good film between piston and cylinder, and it is not till temperatures of 400 degrees up to 500 degrees Fahrenheit are reached that danger arises. At this stage a good deal of the oil is turned to vapor, and is no longer useful as a lubricant. Unless copious supplies are pumped in to make up the loss, the piston will seize, especially if it is a close fit in the cylinder, owing to the absence of the protective film which keeps the metal surfaces from touching. It is only partly true that, at a high temperature, the oil is evaporated and, therefore, passes out of the exhaust with the burnt charge: the truth of it varies with the quality of the oil used. If you have a well-refined pure oil, 99 parts in a 100, say, are evaporated and do no damage; the one part is carbonized—that is to say, decomposed by the heat. It is solid matter in a very fine state of division; a portion of it will go out of the exhaust with the gases, the rest will be deposited on the walls of the combustion chamber, and on top of the piston. In the case of the oil containing notable quantities of impurities, the proportion carbonized is very much greater, and the deposit in the cylinder head grows rapidly.

I have several times heard it stated that the lubricant has to withstand the heat of the explosion. Now that is erroneous, for there is no lubricant in existence capable of successfully standing a temperature of 1,500 degrees Centigrade to 2,000 degrees Centigrade or 3,000 degrees Fahrenheit to 3,500 degrees Fahrenheit, which is the average temperature of the explosion at its hottest point. The lubricant is always at the same temperature as the cylinder wall, and it is this factor which governs the choice of an oil. The size of a cylinder is of some account, because a big cylinder means a big piston, and a correspondingly heavy pressure between them. If an abnormal piston speed, either very fast or very slow, is employed, that must be taken into account, but, as a rule, piston speed need not be considered, so we are narrowed down to cylinder temperature as the chief question to be studied. With an efficiently water-cooled engine an oil of moderate viscosity and volatility can be used. But we must discriminate between a single-cylinder and four or six cylinders; the latter engine, with its smaller and cooler cylinders, less pressure on crank pins and shaft, and higher average speed of running, is best served by a thinner lubricant than the lower-speed single-cylinder engine.

## BRIEF BUSINESS ANNOUNCEMENTS

**Mineola, L. I.**—Willis P. Seaman has established the Auto Shop here.

**Cleveland, O.**—The Ford Motor Car Co. is about to build an addition to its sales-rooms on Euclid avenue.

**Brooklyn**—E. H. Bishop, the representative of the Maxwell, is about to build a new establishment on Bedford avenue.

**Carlisle, Pa.**—The Carlisle Auto & Supply Co. has been established at 13-15 East Main street by John H. Gardner and Albert Kauffman.

**Chicago**—The branch of the B. F. Goodrich Co. will remove from its present stand at 141 Lake street to the five-story building at 24 Lake street.

**Newark, N. J.**—The Webb Mfg. Co. has moved its general offices to its new factory at 60-62 Shipman street, although still retaining its store on Broadway, New York city.

**Tacoma, Wash.**—Harry Hurley, formerly with the Washington Automobile Co., has secured the Acme agency for this state. He has already opened a garage, which is the fourth in this city.

**New York**—Lee Ephraim, of Buffalo, is the manager of the United Automobile Co., which has taken the old Decauville place on Thirty-eighth street. This company deals in second-hand cars.

**Newark, N. J.**—A new garage and sales-room for the Frayer-Miller car has been opened at Halsey and Crawford streets by the Torbensen Motor Co., of Bloomfield. Ostler & Zanes have a repair shop in the same building.

**De Kalb, Ill.**—The De Kalb Automobile & Garage Co. has been moved into its new quarters one block west of the new postoffice. H. M. McGuckin is proprietor of the place. He handles the Rambler and Reo.

**Philadelphia**—The Mechanical Electrical Construction Co. announces its removal to 1609-1611 Camac street, where in connection with its manufacturing and repair business it will also conduct a garage. This company is the manufacturer of the Meeco marine gasoline engine.

**Holly, Mich.**—A company is in process of organization under the auspices of Detroit manufacturers, for the manufacture of gasoline engines for automobiles, boats, etc., and it is probable that the factory will be located in Holly. The company will be capitalized at \$25,000.

**Hopewell, N. J.**—The old building formerly occupied by the Belle Mead Sweets Co. has been rented to the Electric Thermo Vibra Co., of Philadelphia. The company manufactures an automobile motor which does away altogether with the unpleasant fumes of the gasoline engine. The company will occupy the building and commence operations at once.

George B. Fraley is the president of the company.

**Pittsburg**—J. T. Murray is now connected with the Michelin tire branch.

**Boston**—William Loud, formerly of the Decauville agency, is now connected with the Harry Fosdick Co.

**Boston**—The Boston Mechanical Co., with offices in the Motor Mart, has taken the New England agency for the Moon.

**Brooklyn**—The Carlson Auto Co., local agent for the Winton cars, is contemplating the erection of a new garage for the coming season.

**Port Huron, Mich.**—The old buildings of the Steel & Screw Co. have been leased by G. F. Conners, who will engage in the manufacture of automobile parts.

**New Castle, Ind.**—A proposition is being discussed to establish here a large automobile factory to employ 750 men. Thirty acres of land have been offered as an inducement.

**Boston**—J. A. Dowling, formerly with the Harry Fosdick Co., has opened a first-class garage in Portland, Me. He has the local agencies for the Pierce-Arrow and the Columbia machines.

**Pittsburg**—George A. Urling has sold to the Hiland Automobile Co. 100-150 feet in Center avenue, for \$15,500, and the company is about to erect a garage and office building to cost not less than \$50,000 when it is completed.

**Newport, R. I.**—C. B. Rice, of the Baker Electric Co. will open a garage at 100 Bellevue avenue during the summer season. In addition to the salesroom he will have a garage on the Merton road, near the Cliff house, and will also rent electricies by the day, hour, week or month. An order has been placed with the Cooper-Hewitt Co., of New York, for one of its

largest types of Mercury are rectifiers for use at the Newport station.

**Pittsburg**—The Central Auto Co. has secured the local agency for the Moon.

**Indianapolis**—The Windsor Automobile Co., of Pierre, S. D., has changed its name to the Evansville Automobile Co.

**Cortland, N. Y.**—C. B. Hatfield has brought out a new car and will endeavor to organize a company to put it on the market.

**Methuen, Mass.**—A change in the name of the Joseph Bentley concern has been made. Hereafter it will be the Joseph Bentley Hair Co.

**Milwaukee**—The A. D. Meiselbach Motor Vehicle Co. is planning extensive additions to its factory at North Milwaukee. The improvements will cost about \$50,000.

**Newark, N. J.**—Eberhardt Brothers, manufacturers of crank shapers and automobile gear-cutting machines, are about to erect an addition to their establishment at 66 Union street.

**New York**—Anson A. Woodruff, of 11 West One Hundred and Twenty-ninth street, a dealer in automobiles and carriages, has filed a petition in bankruptcy. Liabilities, \$9,353; assets, none.

**Buffalo**—W. F. Winchester, who has been connected for some time with the Franklin company, has severed his connection with that company and is now with the Babcock Electric Co., of this city.

**Utica, N. Y.**—An appeal has been taken in the matter of the Remington Automobile & Motor Co., bankrupt, through L. Southworth, as trustee of that company, against a number of the stockholders.

**Tacoma, Wash.**—G. O. Smith has disposed of his interest in the Reliable Automobile Co., the local Winton agency, to W. O. Williams, his partner, who again has sold a one-third interest to Luke Rock.

**Winnipeg, Man.**—The Lewis Carriage Works have been incorporated with a capital stock of \$75,000, and will engage in the manufacture of automobiles, carriages, bicycles, tools, etc. The directors are E. Lewis, H. G. Banner and I. W. Bruce, of Winnipeg.

**St. Paul**—George H. Strout has resigned as president and director of the Western Automobile Co. He has returned to his old home in New York city. Mr. Strout is considering going into business in New York, having his eye on the commercial vehicle game.

**Reading, Mass.**—A large garage has been opened by W. S. Kinsley and N. H. Hawes, who are both experienced mechanics. It has a complete repair department. It is situated in Reading square, and is between Boston and Lawrence, a favorite drive of the Boston motorists.

## RECENT INCORPORATIONS

**New Rochelle, N. Y.**—Rochelle Motor Co., capital stock \$150,000; to manufacture automobiles, boats, etc.; incorporators, E. T. Birdsall, Arthur S. Winslow and George Moore.

**New York**—McKinley Square Auto Co., capital stock \$1,000; to construct automobiles; incorporators, G. Herrmann, O. A. Green, M. Herrmann and K. Green.

**New York**—George H. Terry Co., capital stock \$25,000; to manufacture motors and engines; incorporators, G. H. Terry, S. C. Smith and Arthur Thompson.

**Brooklyn**—William Garage Co., capital stock \$10,000; to deal in and store automobiles; incorporators, H. O. Hyatt, E. H. Barclay and G. E. Austin.

**Cleveland**—Aerocar Co., capital stock \$10,000; to manufacture automobiles and parts; incorporators, D. C. Westenhover, F. C. Howe, James Welch and J. C. Brooks.

**Elizabeth, N. J.**—New Jersey Motor & Transportation Co., capital stock \$400,000; incorporators, E. M. Wood, R. T. Potts, A. F. Kernstein and Sidney Harris.



# American Motor League

## OFFICIAL BULLETIN

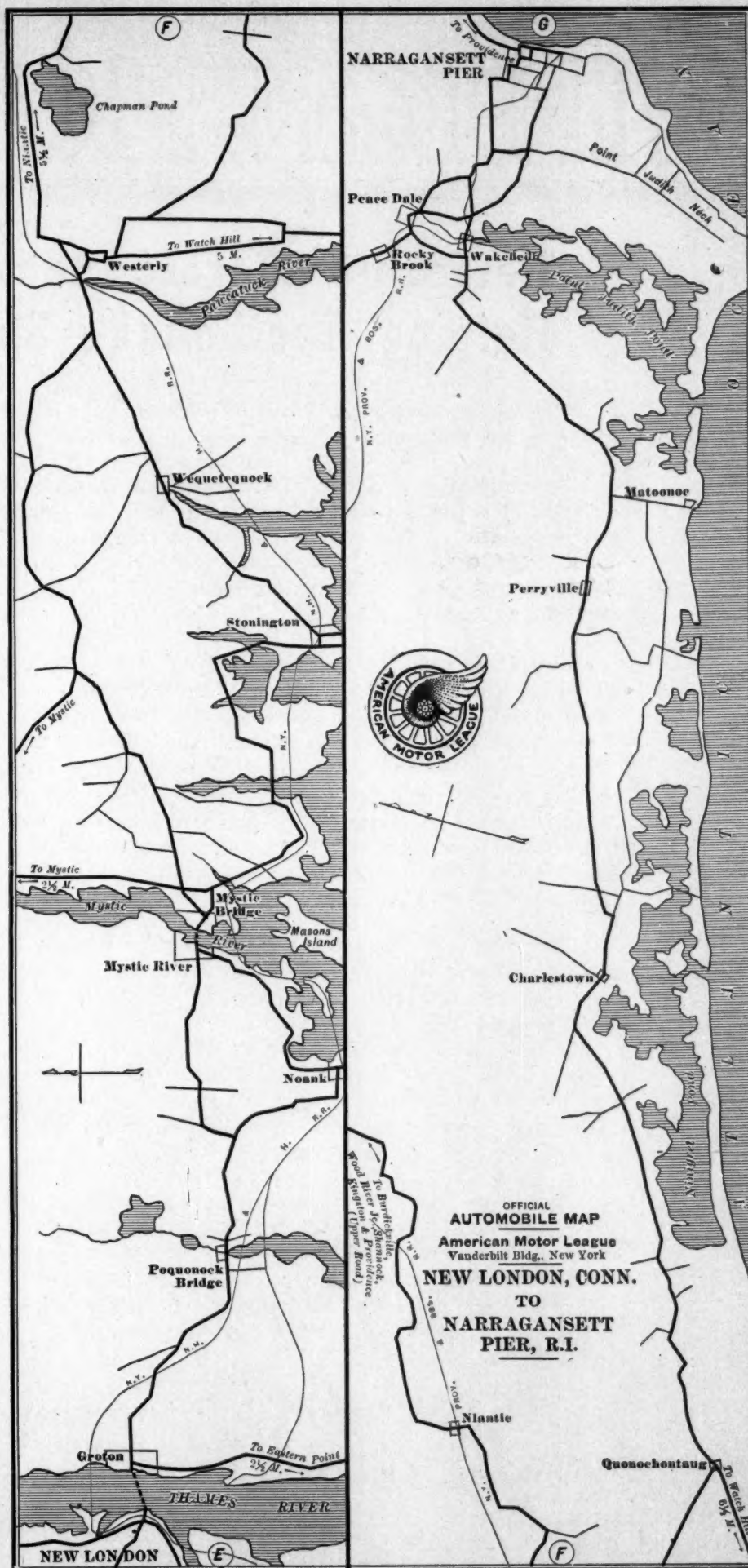
National Headquarters, Vanderbilt Building,  
New York

### RUN OUT OF NEW LONDON

This is the third section of the famous shore route from New York to Boston. The 41-mile stretch between New London, Conn., and Narragansett Pier, R. I., is always picturesque, but the road has many bends and curves, with now and then a puzzling fork. To avoid the possibility of going wrong this map has been made to show all the forks and cross roads outside the cities and villages and the trip may be made in comfortable and easy fashion by following the heavy black lines which indicate the best roads. On certain parts of the route two separate roads are shown by heavy lines, and in such cases the tourist may make his own selection, the quality of roads being about the same in either direction. The map from Narragansett Pier to Providence and from Providence to Boston are completed and the routes from Boston to Portland and from Boston to Worcester and other points westward are now in the hands of the engraver. The drawings for the route northward from New Haven, Hartford and Springfield and from Springfield eastward are completed and the engraver will deliver the plates in a few days. Meanwhile our Philadelphia maps are already under way and there will shortly appear several interesting routes running out from the Quaker city.

### GREAT UNDERTAKING

The league has planned to publish 1,200 route maps covering all the most popular and important automobile routes in the United States and Canada. The estimated cost of this work is about \$40,000. It is a work in which every automobilist should be interested. The A. M. L. is bringing together the motorists of America for a great purpose. The annual dues required of each member are \$2. The amount is too small but with a large number of members it will suffice. There is no initiation fee. The league needs members and the league is needed by thousands of members and members-to-be, in all parts of the country. Every dollar of income is expended to benefit the membership and to build up a strong and influential body. It is not necessary to be a club member in order to join the league. In the perfected organization every member will have a vote and every member will be represented. Send your name and 1 year's dues. Address the secretary of the American Motor League, Vanderbilt building, New York.



# WINTON MODEL-K

## Performs Heroic Service in Helping Earthquake Sufferers

Mr. W. P. Levy, of San Francisco, writes under date of May 8, as follows:

"Immediately after the earthquake shock on the morning of the 18th ult., I jumped into my Winton Model K and started for my office. On the way I was held up by Police Officer D. C. B. McCarthy and taken to Mayor Schmitz at the Hall of Justice, where I was impressed into the hospital service. I did duty for 15 days.

"During the first two days of the conflagration I rescued at least 50 people, among them being the motorists' friend, Captain Gleeson, of the police department, who, for the past year, has had charge of automobiles in Golden Gate Park. The captain was injured by a premature blast and was taken to the Mechanics pavilion where I rescued him and took him to the Presidio hospital. Upon my return I found the Pavilion in ashes. To know that I had rescued the captain, who has been the friend of every motorist in San Francisco, is a great pleasure to me.

"During the first four days and nights I did not sleep altogether three hours. My Winton was in constant use, and during the 15 days' service, I AVERAGED 150 MILES PER DAY, OR A TOTAL OF 2250 MILES. DURING THE ENTIRE TIME MY CAR WAS NOT WASHED, I DID NOT SPEND TEN MINUTES ON ADJUSTMENTS, and the only thing I have to regret was that I robbed your demonstrating machine, which I found opposite your garage in Jefferson Park, of a tire, for which I hereby apologize.

"I question if any other car of any make or price in this city has done as good work as mine, with as little attention, and you are at liberty to send any incredulous persons to me, or to members of the police or Red Cross Department of this city, whose names I will gladly furnish upon application. My address is 158 Tremont Avenue."

## The Winton Motor Carriage Co.

Licensed under Selden Patent

CLEVELAND, OHIO, U. S. A.

Winton Branch Houses in New York, Boston, Philadelphia, Pittsburg, Chicago and London. Winton Sales Agencies in all important places.